

Calendar No. 662117TH CONGRESS
2^D SESSION**S. 4237**

To establish and maintain a coordinated program within the National Oceanic and Atmospheric Administration that improves wildfire, fire weather, fire risk, and smoke related forecasting, detection, modeling, observations, and service delivery, and to address growing needs in the wildland-urban interface, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MAY 17, 2022

Ms. CANTWELL (for herself, Mr. SULLIVAN, Mr. LUJÁN, Mr. PADILLA, Ms. MURKOWSKI, and Ms. ROSEN) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

DECEMBER 15, 2022

Reported by Ms. CANTWELL, with an amendment

[Strike out all after the enacting clause and insert the part printed in *italic*]

A BILL

To establish and maintain a coordinated program within the National Oceanic and Atmospheric Administration that improves wildfire, fire weather, fire risk, and smoke related forecasting, detection, modeling, observations, and service delivery, and to address growing needs in the wildland-urban interface, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
 2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) **SHORT TITLE.**—This Act may be cited as the
 5 “Fire Ready Nation Act of 2022”.

6 (b) **TABLE OF CONTENTS.**—The table of contents for
 7 this Act is as follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Definitions.
- Sec. 3. Establishment of fire weather services program.
- Sec. 4. National Oceanic and Atmospheric Administration data management.
- Sec. 5. Digital fire weather services and data management.
- Sec. 6. High-performance computing.
- Sec. 7. Government Accountability Office report on fire weather services program.
- Sec. 8. Fire weather testbed.
- Sec. 9. Fire weather surveys and assessments.
- Sec. 10. Incident Meteorologist Service.
- Sec. 11. Automated surface observing system.
- Sec. 12. Emergency response activities.
- Sec. 13. Government Accountability Office report on interagency wildfire forecasting, prevention, planning, and management bodies.
- Sec. 14. Amendments to Infrastructure Investment and Jobs Act relating to wildfire mitigation.
- Sec. 15. Wildfire technology modernization amendments.
- Sec. 16. Cooperation; coordination; support to non-Federal entities.
- Sec. 17. International coordination.
- Sec. 18. Submissions to Congress regarding the fire weather services program, incident meteorologist workforce needs, and National Weather Service workforce support.
- Sec. 19. Authorization of appropriations.

8 **SEC. 2. DEFINITIONS.**

9 In this Act:

10 (1) **ADMINISTRATION.**—The term “Administra-
 11 tion” means the National Oceanic and Atmospheric
 12 Administration.

1 (2) APPROPRIATE COMMITTEES OF CON-
2 GRESS.—The term “appropriate committees of Con-
3 gress” means—

4 (A) the Committee on Commerce, Science,
5 and Transportation of the Senate; and

6 (B) the Committee on Science, Space, and
7 Technology of the House of Representatives.

8 (3) DECADAL.—The term “decadal” means a
9 time range from multiple years to multiple decades.

10 (4) EARTH SYSTEM MODEL.—The term “Earth
11 system model” means a mathematical model con-
12 taining all components of the Earth, namely the at-
13 mosphere, oceans, land, cryosphere, and biosphere.
14 The Earth system model represents the critical
15 physical, chemical, and biological processes and the
16 interactions among those processes in hydrological
17 and biogeochemical cycles that affect weather and
18 climate.

19 (5) FIRE ENVIRONMENT.—The term “fire envi-
20 ronment” means—

21 (A) the environmental conditions, such as
22 soil moisture, vegetation, topography, snowpack,
23 atmospheric temperature, moisture, and wind,
24 that influence—

25 (i) fuel and fire behavior; and

1 (ii) smoke dispersion and transport;

2 and

3 (B) the associated environmental impacts

4 occurring during and after fire events.

5 (6) FIRE WEATHER.—The term “fire weather”

6 means any type of weather conditions that influence

7 the start, spread, character, or behavior of wildfire

8 or fires at the wildland-urban interface and all asso-

9 ciated meteorological and chemical phenomena, in-

10 cluding air quality, smoke, and meteorological pa-

11 rameters such as relative humidity, air temperature,

12 wind speed and direction, and atmospheric composi-

13 tion and chemistry, including emissions and mixing

14 heights.

15 (7) IMPACT-BASED DECISION SUPPORT SERV-

16 ICES.—The term “impact-based decision support

17 services” means forecast advice and interpretative

18 services the Administration provides to help core

19 partners, such as emergency personnel and public

20 safety officials, make decisions when weather, water,

21 and climate impact the lives and livelihoods of the

22 people of the United States.

23 (8) SEASONAL.—The term “seasonal” means a

24 time range between 3 months and 2 years.

1 (9) SECRETARY.—The term “Secretary” means
2 the Secretary of Commerce.

3 (10) SMOKE.—The term “smoke” means emis-
4 sions, including the gases and particles released into
5 the air as a result of combustion.

6 (11) STATE.—The term “State” means a State,
7 the District of Columbia, the Commonwealth of
8 Puerto Rico, Guam, American Samoa, the Common-
9 wealth of the Northern Mariana Islands, the United
10 State Virgin Islands, the Federated States of Micro-
11 nesia, the Republic of the Marshall Islands, or the
12 Republic of Palau.

13 (12) SUBSEASONAL.—The term “subseasonal”
14 means a time range between 2 weeks and 3 months.

15 (13) TRIBAL GOVERNMENT.—The term “Tribal
16 government” means the recognized governing body
17 of any Indian or Alaska Native tribe, band, nation,
18 pueblo, village, community, component band, or com-
19 ponent reservation, individually identified (including
20 parenthetically) in the list published most recently as
21 of the date of enactment of this Act pursuant to sec-
22 tion 104 of the Federally Recognized Indian Tribe
23 List Act of 1994 (25 U.S.C. 5131).

1 (14) UNDER SECRETARY.—The term “Under
2 Secretary” means the Under Secretary of Commerce
3 for Oceans and Atmosphere.

4 (15) WEATHER ENTERPRISE.—The term
5 “weather enterprise” means—

6 (A) individuals, organizations, offices, pro-
7 grams, or any other form of entity from public,
8 private, and academic sectors that contribute to
9 the research, development, and production of
10 weather forecast products; and

11 (B) primary consumers of those weather
12 forecast products.

13 (16) WILDFIRE.—The term “wildfire” means
14 any nonstructure fire that occurs in vegetation or
15 natural fuels, originating from an unplanned igni-
16 tion.

17 (17) WILDLAND-URBAN INTERFACE.—The term
18 “wildland-urban interface” means the area, zone, or
19 region of transition between unoccupied or undevel-
20 oped land and human development where structures
21 and other human development meet or intermingle
22 with undeveloped wildland or vegetative fuels.

1 **SEC. 3. ESTABLISHMENT OF FIRE WEATHER SERVICES**
2 **PROGRAM.**

3 (a) **IN GENERAL.**—The Under Secretary shall estab-
4 lish and maintain a coordinated fire weather services pro-
5 gram within the Administration.

6 (b) **PROGRAM FUNCTIONS.**—The functions of the
7 program established under subsection (a), consistent with
8 the priorities described in section 101 of the Weather Re-
9 search and Forecasting Innovation Act of 2017 (15 U.S.C.
10 8511), shall be—

11 (1) to support readiness, responsiveness, under-
12 standing, and overall resilience of the United States
13 to wildfires, fire weather, smoke, and other associ-
14 ated conditions, hazards, and impacts in built and
15 natural environments and at the wildland-urban
16 interface;

17 (2) to collaboratively disseminate accurate, pre-
18 cise, effective, and timely risk communications, fore-
19 casts, watches, and warnings relating to wildfires,
20 fire weather, air quality, smoke, and other associated
21 conditions, hazards, and impacts, as applicable, in
22 collaboration with Federal land management agen-
23 cies;

24 (3) to partner with and support the public,
25 Federal, State, and Tribal governments, and aca-
26 demic and local partners through the development of

1 capabilities, impact-based decision support services,
2 and overall service delivery and utility;

3 (4) to conduct and support research and devel-
4 opment of new and innovative models, technologies,
5 techniques, products, systems, processes, and proce-
6 dures to improve understanding of wildfires, fire
7 weather, air quality, the fire environment, including
8 impacts of climate variability and changing climate
9 conditions, smoke, and associated conditions, haz-
10 ards, and impacts, and to transition such research
11 into effective operations;

12 (5) to develop strong research-to-operations and
13 operations-to-research transitions, in order to facili-
14 tate delivery of products, services, and tools to oper-
15 ational users and platforms; and

16 (6) to develop, in coordination with Federal
17 land management agencies, impact-based decision
18 support services that operationalize and integrate
19 the functions described in paragraphs (1) through
20 (5) in order to provide comprehensive impact-based
21 decision support services that encompass the fire en-
22 vironment.

23 (c) PROGRAM PRIORITIES.—In developing and imple-
24 menting the program established under subsection (a), the
25 Under Secretary shall prioritize—

1 (1) development of a fire weather-enabled Earth
2 system model and data assimilation systems that—

3 (A) are capable of prediction and fore-
4 casting across all timescales;

5 (B) include variables associated with fire
6 weather, air quality from smoke, and the fire
7 environment, and other variables, as determined
8 by the Under Secretary;

9 (C) improve understanding of the connec-
10 tions between fire weather and modes of climate
11 variability; and

12 (D) incorporate emerging techniques such
13 as artificial intelligence, machine learning, and
14 cloud computing;

15 (2) advancement of observational capabilities,
16 including satellite-, airborne-, air-, and ground-based
17 systems and technologies that—

18 (A) identify—

19 (i) high-risk pre-ignition conditions;

20 (ii) conditions that influence fire be-
21 havior and spread including those condi-
22 tions that suppress active fire events; and

23 (iii) fire risk values;

24 (B) support real-time notification of igni-
25 tions;

1 (C) support observations and data collec-
2 tion of fire weather and fire environment vari-
3 ables for development of the model and systems
4 under paragraph (1); and

5 (D) support forecasts and advancing un-
6 derstanding and research of the impacts of
7 wildfires on human health, ecosystems, climate,
8 transportation, and economies; and

9 (3) development and implementation of ad-
10 vanced and user-oriented impact-based decision
11 tools, science, and technologies that—

12 (A) ensure real-time and retrospective
13 data, products, and services are findable, acces-
14 sible, interoperable, usable, inform further re-
15 search, and are analysis- and decision-ready;

16 (B) provide targeted information through-
17 out the fire lifecycle including pre-ignition, de-
18 tection, forecasting, post-fire, and monitoring
19 phases; and

20 (C) support early assessment of post-fire
21 hazards, such as air quality, debris flows,
22 mudslides, and flooding.

23 (d) PROGRAM ACTIVITIES.—In developing and imple-
24 menting the program established under subsection (a), the
25 Under Secretary may—

1 (1) conduct relevant physical and social science
2 research activities in support of the functions de-
3 scribed in subsection (b) and the priorities described
4 in subsection (c);

5 (2) conduct relevant activities, in coordination
6 with Federal land management agencies, to assess
7 fuel characteristics, including moisture, loading, and
8 other parameters used to determine fire risk levels
9 and outlooks;

10 (3) support and conduct research that assesses
11 impacts to marine, riverine, and other relevant eco-
12 systems, which may include forest and rangeland
13 ecosystems, resulting from activities associated with
14 mitigation of and response to wildfires;

15 (4) support and conduct attribution science re-
16 search relating to wildfires, fire weather, fire risk,
17 smoke, and associated conditions, risks, and im-
18 pacts;

19 (5) develop smoke and air quality forecasts,
20 forecast guidance, and prescribed burn weather fore-
21 casts, and conduct research on the impact of such
22 forecasts on response behavior that minimizes
23 health-related impacts from smoke exposure;

24 (6) use, in coordination with Federal land man-
25 agement agencies, wildland fire resource intelligence

1 to inform fire environment impact-based decision
2 support products and services for safety;

3 ~~(7) evaluate and provide data, tools, and serv-~~
4 ~~ices to support determinations for the implementa-~~
5 ~~tion of mitigation measures such as prescribed burns~~
6 ~~and selective thinning;~~

7 ~~(8) provide comprehensive training to ensure~~
8 ~~staff of the program established under subsection~~
9 ~~(a) is properly equipped to deliver the impact-based~~
10 ~~decision support products and services described in~~
11 ~~paragraphs (1) through (6); and~~

12 ~~(9) acquire through contracted purchase private~~
13 ~~sector-produced observational data to fill identified~~
14 ~~gaps, as needed.~~

15 ~~(c) COLLABORATION; AGREEMENTS.—~~

16 ~~(1) COLLABORATION.—The Under Secretary~~
17 ~~shall, as the Under Secretary considers appropriate,~~
18 ~~collaborate and consult with partners in the weather~~
19 ~~and climate enterprises, academic institutions,~~
20 ~~States, Tribal governments, local partners, and Fed-~~
21 ~~eral agencies, including land and fire management~~
22 ~~agencies, in the development and implementation of~~
23 ~~the program established under subsection (a).~~

24 ~~(2) AGREEMENTS.—The Under Secretary may~~
25 ~~enter into agreements in support of the functions de-~~

1 scribed in subsection (b); the priorities described in
 2 subsection (c); the activities described in subsection
 3 (d); and activities carried out under section 8.

4 **SEC. 4. NATIONAL OCEANIC AND ATMOSPHERIC ADMINIS-**
 5 **TRATION DATA MANAGEMENT.**

6 Section 301 of the Weather Research and Fore-
 7 casting Innovation Act of 2017 (15 U.S.C. 8531) is
 8 amended—

9 (1) by redesignating subsections (f) and (g) as
 10 subsections (g) and (h), respectively; and

11 (2) by inserting after subsection (e) the fol-
 12 lowing:

13 “(f) DATA AVAILABILITY AND MANAGEMENT.—

14 “(1) IN GENERAL.—The Under Secretary
 15 shall—

16 “(A) make data and metadata generated
 17 or collected by the National Oceanic and Ad-
 18 ministration that the Under Secretary has the
 19 legal right to redistribute fully and openly avail-
 20 able, in accordance with chapter 35 of title 44,
 21 United States Code and the Foundations for
 22 Evidence-Based Policymaking Act of 2018
 23 (Public Law 115–435; 132 Stat. 5529) and the
 24 amendments made by that Act, and preserve
 25 and curate such data and metadata, in accord-

1 ance with chapter 31 of title 44, United States
2 Code (commonly known as the ‘Federal Records
3 Act of 1950’), in order to maximize use of such
4 data and metadata; and

5 “(B) manage and steward the access, ar-
6 chival, and retrieval activities for the data and
7 metadata described in subparagraph (A) by—

8 “(i) using—

9 “(I) enterprise-wide infrastruc-
10 ture, emerging technologies, commer-
11 cial partnerships, and the skilled
12 workforce needed to provide appro-
13 priate data management from collec-
14 tion to broad access; and

15 “(II) associated information serv-
16 ices; and

17 “(ii) pursuing the maximum inter-
18 operability of data and information by—

19 “(I) leveraging data, information,
20 knowledge, and tools from across the
21 Federal Government to support equi-
22 table access, cross-sectoral collabora-
23 tion and innovation, and local plan-
24 ning and decision-making; and

1 “(H) developing standards and
 2 practices for the adoption and citation
 3 of digital object identifiers for
 4 datasets, models, and analytical tools.

5 “(2) COLLABORATION.—In carrying out this
 6 subsection, the Under Secretary shall collaborate
 7 with such Federal partners and stakeholders as the
 8 Under Secretary considers relevant—

9 “(A) to develop standards to pursue max-
 10 imum interoperability of data, information,
 11 knowledge, and tools across the Federal Gov-
 12 ernment, convert historical records into com-
 13 mon digital formats, and improve access and
 14 usability of data by partners and stakeholders;

15 “(B) to identify and solicit relevant data
 16 from Federal and international partners and
 17 other relevant stakeholders, as the Under Sec-
 18 retary considers appropriate; and

19 “(C) to develop standards and practices for
 20 the adoption and citation of digital object iden-
 21 tifiers for datasets, models, and analytical
 22 tools.”.

23 **SEC. 5. DIGITAL FIRE WEATHER SERVICES AND DATA MAN-**
 24 **AGEMENT.**

25 (a) IN GENERAL.—

1 (1) **DIGITAL PRESENCE.**—The Under Secretary
2 shall develop and maintain a comprehensive, central-
3 ized, and publicly accessible digital presence de-
4 signed to promote findability, accessibility, interoper-
5 ability, usability, and utility of the services, tools,
6 data, and information produced by the program es-
7 tablished under section 3(a).

8 (2) **DIGITAL PLATFORM AND TOOLS.**—In ear-
9 rying out paragraph (1), the Under Secretary
10 shall—

11 (A) seek to ensure the digital platform and
12 tools of the Administration integrate geospatial
13 data, decision support tools, training, and best
14 practices to provide real-time fire weather fore-
15 casts and address fire-related issues and needs;
16 and

17 (B) strive to enhance community resilience,
18 ecosystem values, and economic growth and de-
19 velopment by helping communities and other
20 users of the digital platform and tools address
21 their issues, needs, and challenges through
22 maximum usability and utility.

23 (b) **PUBLIC AVAILABILITY.**—The Under Secretary
24 shall make all data, research, reports, findings, surveys,
25 and assessments relevant to the program established

1 under section 3(a), as determined by the Under Secretary,
2 available in a publicly accessible digital format.

3 ~~(c) INTERNET-BASED TOOLS.—~~In carrying out sub-
4 sections (a) and (b), the Under Secretary shall develop
5 and implement internet-based tools, such as webpages and
6 smartphone and other mobile applications, to increase util-
7 ity and access to services and products for the benefit of
8 users.

9 ~~(d) DATA MANAGEMENT.—~~The Under Secretary
10 shall develop and maintain services that provide public ac-
11 cess to digital fire weather data and information—

12 ~~(1) to improve understanding and historical~~
13 ~~analysis of wildfire and fire weather science, includ-~~
14 ~~ing inventories of fire emissions required for multi-~~
15 ~~decadal model runs;~~

16 ~~(2) to support—~~

17 ~~(A) the archiving, stewardship, utility, and~~
18 ~~preservation of wildfire and fire weather data~~
19 ~~including satellite-, ground-, airborne-, and air-~~
20 ~~based observations; and~~

21 ~~(B) real-time and retrospective model fore-~~
22 ~~casts;~~

23 ~~(3) to promote findability, interoperability,~~
24 ~~analysis- and decision-readiness, and reusability of~~
25 ~~historical and near real-time data across Federal,~~

1 State, Tribal, and local users, including ensuring
 2 digital access and machine-readability of historical
 3 fire weather records; and

4 (4) to support equitable access, cross-sectoral
 5 collaboration and innovation, and local planning and
 6 decision making.

7 **SEC. 6. HIGH-PERFORMANCE COMPUTING.**

8 (a) IN GENERAL.—The Under Secretary shall seek
 9 to acquire sufficient high-performance computing re-
 10 sources and capacity for research, operations, and data
 11 storage in support of the program established under sec-
 12 tion 3(a).

13 (b) CONSIDERATIONS.—In acquiring high-perform-
 14 ance computing capacity under subsection (a), the Under
 15 Secretary shall consider requirements needed for—

16 (1) the transition of research and testbed devel-
 17 opments into operations; and

18 (2) skilled workforce development.

19 **SEC. 7. GOVERNMENT ACCOUNTABILITY OFFICE REPORT**
 20 **ON FIRE WEATHER SERVICES PROGRAM.**

21 (a) IN GENERAL.—Not later than 5 years after the
 22 date of the enactment of this Act, the Comptroller General
 23 of the United States shall submit to Congress a report
 24 on the program established under section 3(a).

1 (b) ELEMENTS.—The report required by subsection

2 (a) shall—

3 (1) evaluate the performance of the program by
4 establishing initial baseline capabilities and tracking
5 progress made toward fully operationalizing the
6 functions described in section 3(b);

7 (2) assess the efficacy of cross-agency collabora-
8 tion and stakeholder engagement in carrying out the
9 program and provide recommendations to improve
10 such activities;

11 (3) assess the program for inefficiencies, iden-
12 tify duplicative efforts across Federal efforts, and
13 provide relevant recommendations; and

14 (4) include such other recommendations as the
15 Comptroller General determines are appropriate to
16 improve the program.

17 **SEC. 8. FIRE WEATHER TESTBED.**

18 (a) ESTABLISHMENT OF FIRE WEATHER
19 TESTBED.—The Under Secretary shall establish a fire
20 weather testbed that enables engagement across the Fed-
21 eral Government, State and local governments, academia,
22 private and federally funded research laboratories, the pri-
23 vate sector, and end-users in order to evaluate the accu-
24 racy and usability of technology, models, fire weather
25 products and services, and other research to accelerate the

1 implementation, transition to operations, and use of new
2 capabilities by the Administration, Federal and land man-
3 agement agencies, and other relevant stakeholders.

4 (b) UNCREWED AIRCRAFT SYSTEMS.—

5 (1) IN GENERAL.—The Under Secretary shall—

6 (A) research and assess the role and poten-
7 tial of uncrewed aircraft systems to improve
8 data collection in support of modeling, observa-
9 tions, predictions, forecasts, and impact-based
10 decision support services; and

11 (B) transition uncrewed aircraft systems
12 technologies from research to operations as the
13 Under Secretary considers appropriate.

14 (2) PILOT REQUIRED.—In carrying out para-
15 graph (1), not later than 1 year after the date of the
16 enactment of this Act, the Under Secretary shall
17 conduct at least 1 pilot of uncrewed aircraft systems
18 for fire weather and fire environment observations.

19 (3) SAVINGS CLAUSE.—

20 (A) IN GENERAL.—In carrying out activi-
21 ties under this subsection, the Under Secretary
22 shall ensure that any testing or deployment of
23 uncrewed aircraft systems follow procedures, re-
24 strictions, and protocols established by the
25 heads of the Federal agencies with statutory or

1 regulatory jurisdiction over any airspace in
2 which wildfire response activities are conducted
3 during an active wildfire event.

4 (B) CONSULTATION AND COORDINA-
5 TION.—The Under Secretary shall consult and
6 coordinate with relevant Federal land manage-
7 ment agencies and the Federal Aviation Admin-
8 istration to develop processes for the appro-
9 priate deployment of the systems described in
10 subparagraph (A).

11 **SEC. 9. FIRE WEATHER SURVEYS AND ASSESSMENTS.**

12 (a) ~~ANNUAL POST-FIRE-WEATHER SEASON SURVEY~~
13 ~~AND ASSESSMENT.~~—

14 (1) ~~IN GENERAL.~~—During the second winter
15 following the enactment of this Act, and each year
16 thereafter, the Under Secretary shall conduct a post-
17 fire-weather season survey and assessment.

18 (2) ~~ELEMENTS.~~—After conducting a post-fire-
19 weather season survey and assessment under para-
20 graph (1), the Under Secretary shall—

21 (A) investigate any gaps in data collected
22 during the assessment;

23 (B) identify and implement strategies and
24 procedures to improve program services and in-
25 formation dissemination;

1 (C) update systems, processes, strategies,
2 and procedures to enhance the efficiency and
3 reliability of data obtained from the assessment;

4 (D) evaluate the accuracy and efficacy of
5 physical fire weather forecasting information
6 for each incident included in the survey and as-
7 sessment; and

8 (E) assess and refine performance meas-
9 ures, as needed.

10 (b) SURVEYS AND ASSESSMENTS FOLLOWING INDI-
11 VIDUAL WILDFIRE EVENTS.—The Under Secretary may
12 conduct surveys and assessments following individual wild-
13 fire events as the Under Secretary determines necessary.

14 (c) GOAL.—In carrying out activities under this sec-
15 tion, the Under Secretary shall seek to increase the num-
16 ber of post-wildfire community impact studies, including
17 by surveying individual and collective responses and incor-
18 porating other applicable topics of social science research.

19 (d) ANNUAL BRIEFING.—Not less frequently than
20 once each year, the Under Secretary shall provide a brief-
21 ing to the appropriate committees of Congress that pro-
22 vides—

23 (1) an overview of the fire season; and

24 (2) an outlook for the fire season for the com-
25 ing year.

1 (e) **COORDINATION.**—In conducting any survey or as-
2 sessment under this section, the Under Secretary shall co-
3 ordinate with Federal, State, and local partners, Tribal
4 governments, private entities, and such institutions of
5 higher education as the Under Secretary considers rel-
6 evant in order to—

- 7 (1) improve operations and collaboration; and
8 (2) optimize data collection, sharing, integra-
9 tion, assimilation, and dissemination.

10 (f) **DATA AVAILABILITY.**—The Under Secretary shall
11 make the data and findings obtained from each assess-
12 ment conducted under this section available to the public
13 in an accessible digital format as soon as practicable after
14 conducting the assessment.

15 (g) **SERVICE IMPROVEMENTS.**—The Under Secretary
16 shall make best efforts to incorporate the results and rec-
17 ommendations of each assessment conducted under this
18 section into the research and development plan and oper-
19 ations of the Administration.

20 **SEC. 10. INCIDENT METEOROLOGIST SERVICE.**

21 (a) **ESTABLISHMENT.**—The Under Secretary shall es-
22 tablish and maintain an Incident Meteorologist Service
23 within the National Weather Service (in this section re-
24 ferred to as the “Service”).

1 (b) ~~INCLUSION OF EXISTING INCIDENT METEOROLOGISTS.~~—The Service shall include—

3 (1) ~~the incident meteorologists of the Administration as of the date of this enactment of this Act;~~
4 and

6 (2) ~~such incident meteorologists of the Administration as may be appointed after such date.~~

8 (c) ~~FUNCTIONS.~~—The Service shall provide—

9 (1) ~~on-site impact-based decision support services to Federal, State, Tribal government, and local government emergency response agencies preceding, during, and following wildland fires or other events that threaten life or property, including high-impact and extreme weather events; and~~

15 (2) ~~support to Federal, State, Tribal government, and local government decision makers, partners, and stakeholders for seasonal planning.~~

18 (d) ~~DEPLOYMENT.~~—The Service shall be deployed—

19 (1) ~~as determined by the Under Secretary; or~~

20 (2) ~~at the request of the head of another Federal agency.~~

22 (e) ~~STAFFING AND RESOURCES.~~—In establishing and
23 maintaining the Service, the Under Secretary shall identify,
24 acquire, and maintain adequate levels of staffing and
25 resources to meet user needs.

1 (f) SYMBOL.—

2 (1) IN GENERAL.—The Under Secretary may—

3 (A) create, adopt, and publish in the Fed-
4 eral Register a symbol for the Service; and

5 (B) restrict the use of such symbol as ap-
6 propriate.

7 (2) USE OF SYMBOL.—The Under Secretary
8 may authorize the use of a symbol adopted under
9 this subsection by any individual or entity as the
10 Under Secretary considers appropriate.

11 (3) CONTRACT AUTHORITY.—The Under Sec-
12 retary may award contracts for the creation of sym-
13 bols under this subsection.

14 (4) OFFENSE.—It shall be unlawful for any
15 person—

16 (A) to represent themselves as an official
17 of the Service absent the designation or ap-
18 proval of the Under Secretary;

19 (B) to manufacture, reproduce, or other-
20 wise use any symbol adopted by the Under Sec-
21 retary under this subsection, including to sell
22 any item bearing such a symbol, unless author-
23 ized by the Under Secretary; or

24 (C) to violate any regulation promulgated
25 by the Secretary under this subsection.

1 (g) ~~SUPPORT FOR INCIDENT METEOROLOGISTS.—~~

2 The Under Secretary shall provide resources, access to
3 real-time fire weather forecasts, training, administrative
4 and logistical support, and access to professional coun-
5 seling or other forms of support as the Under Secretary
6 considers appropriate for the betterment of the emotional
7 and mental health and well-being of incident meteorolo-
8 gists and other employees of the Administration involved
9 with response to high-impact and extreme fire weather
10 events.

11 **SEC. 11. AUTOMATED SURFACE OBSERVING SYSTEM.**

12 (a) ~~JOINT ASSESSMENT AND PLAN.—~~

13 (1) ~~IN GENERAL.—~~The Under Secretary, in col-
14 laboration with the Administrator of the Federal
15 Aviation Administration and the Secretary of De-
16 fense, shall—

17 (A) ~~conduct an assessment of resources,~~
18 personnel, procedures, and activities necessary
19 to maximize the functionality and utility of the
20 automated surface observing system of the
21 United States that identifies—

22 (i) ~~key system upgrades needed to im-~~
23 prove observation quality and utility for
24 weather forecasting, aviation safety, and
25 other users;

- 1 (ii) improvements needed in observa-
2 tions within the planetary boundary layer,
3 including mixing height;
- 4 (iii) improvements needed in public
5 accessibility of observational data;
- 6 (iv) improvements needed to reduce
7 latency in reporting of observational data;
- 8 (v) relevant data to be collected for
9 the production of forecasts or forecast
10 guidance relating to atmospheric composi-
11 tion, including particulate and air quality
12 data, and aviation safety;
- 13 (vi) areas of concern regarding oper-
14 ational continuity and reliability of the sys-
15 tem, which may include needs for on-night
16 staff, particularly in remote and rural
17 areas and areas where system failure
18 would have the greatest negative impact to
19 the community;
- 20 (vii) stewardship, data handling, data
21 distribution, and product generation needs
22 arising from upgrading and changing the
23 automated surface observation systems;
- 24 (viii) possible solutions for areas of
25 concern identified under clause (vi), includ-

1 ing with respect to the potential use of
2 backup systems; power and communication
3 system reliability; staffing needs and per-
4 sonnel location; and the acquisition of crit-
5 ical component backups and proper storage
6 location to ensure rapid system repair nec-
7 essary to ensure system operational con-
8 tinuity; and

9 (ix) research, development, and transi-
10 tion to operations needed to develop ad-
11 vanced data collection, quality control, and
12 distribution so that the data are provided
13 to models, users, and decision support sys-
14 tems in a timely manner; and

15 (B) develop and implement a plan that ad-
16 dresses the findings of the assessment con-
17 ducted under subparagraph (A), including by
18 seeking and allocating resources necessary to
19 ensure that system upgrades are standardized
20 across the Administration, the Federal Aviation
21 Administration, and the Department of Defense
22 to the extent practicable.

23 (2) STANDARDIZATION.—Any system standard-
24 ization implemented under paragraph (1)(B) shall

1 not impede activities to upgrade or improve indi-
2 vidual units of the system.

3 ~~(3) REMOTE AUTOMATIC WEATHER STATION~~
4 ~~COORDINATION.~~—The Under Secretary, in collabora-
5 tion with relevant Federal agencies and the National
6 Interagency Fire Center, shall assess and develop co-
7 operative agreements to improve coordination, inter-
8 operability standards, operations, and placement of
9 remote automatic weather stations for the purpose
10 of improving utility and coverage of remote auto-
11 matic weather stations, automated surface observa-
12 tion systems, and other similar stations and systems
13 for weather and climate operations.

14 ~~(b) REPORT TO CONGRESS.~~—

15 ~~(1) IN GENERAL.~~—Not later than 2 years after
16 the date of the enactment of this Act, the Under
17 Secretary, in collaboration with the Administrator of
18 the Federal Aviation Administration and the Sec-
19 retary of Defense, shall submit to the appropriate
20 committees of Congress a report that—

21 ~~(A) details the findings of the assessment~~
22 ~~required by subparagraph (A) of subsection~~
23 ~~(a)(1); and~~

24 ~~(B) the plan required by subparagraph (B)~~
25 ~~of such subsection.~~

1 (2) ELEMENTS.—The report required by para-
2 graph (1) shall include a detailed assessment of ap-
3 propriations required—

4 (A) to address the findings of the assess-
5 ment required by subparagraph (A) of sub-
6 section (a)(1); and

7 (B) to implement the plan required by sub-
8 paragraph (B) of such subsection.

9 (c) GOVERNMENT ACCOUNTABILITY OFFICE RE-
10 PORT.—Not later than 4 years after the date of the enact-
11 ment of this Act, the Comptroller General of the United
12 States shall submit to Congress a report that—

13 (1) evaluates the functionality, utility, reli-
14 ability, and operational status of the automated sur-
15 face observing system across the Administration, the
16 Federal Aviation Administration, and the Depart-
17 ment of Defense;

18 (2) evaluates the progress, performance, and
19 implementation of the plan required by subsection
20 (a)(1)(B);

21 (3) assesses the efficacy of cross-agency collabo-
22 ration and stakeholder engagement in carrying out
23 the plan and provides recommendations to improve
24 such activities;

1 (4) evaluates the operational continuity and re-
2 liability of the system, particularly in remote and
3 rural areas and areas where system failure would
4 have the greatest negative impact to the community,
5 and provides recommendations to improve such con-
6 tinuity and reliability;

7 (5) assesses Federal coordination regarding the
8 remote automatic weather station network, air re-
9 source advisors, and other Federal observing assets
10 used for weather and climate modeling and response
11 activities, and provides recommendations for im-
12 provements; and

13 (6) includes such other recommendations as the
14 Comptroller General determines are appropriate to
15 improve the system.

16 **SEC. 12. EMERGENCY RESPONSE ACTIVITIES.**

17 (a) DEFINITIONS.—In this section:

18 (1) BASIC PAY.—The term “basic pay” includes
19 any applicable locality-based comparability payment
20 under section 5304 of title 5, United States Code,
21 any applicable special rate supplement under section
22 5305 of such title, or any equivalent payment under
23 a similar provision of law.

1 (2) COVERED EMPLOYEE.—The term “covered
2 employee” means an employee of the Department of
3 Commerce.

4 (3) COVERED SERVICES.—The term “covered
5 services” means services performed by a covered em-
6 ployee while—

7 (A) serving as an incident meteorologist
8 accompanying a wildland firefighter crew;

9 (B) serving—

10 (i) on an incident management team;

11 (ii) as an emergency response spe-
12 cialist;

13 (iii) at the National Interagency Fire
14 Center;

15 (iv) at a Geographic Area Coordina-
16 tion Center; or

17 (v) at an operations center; or

18 (C) serving in a capacity determined by the
19 Secretary, or the Under Secretary acting on be-
20 half of the Secretary, to be primarily relating to
21 emergency response activities.

22 (4) EMPLOYEE.—The term “employee” has the
23 meaning given that term in section 2105 of title 5,
24 United States Code.

1 (5) PREMIUM PAY.—The term “premium pay”
2 means premium pay for the purposes of section
3 5547(a) of title 5, United States Code.

4 (b) WAIVER.—

5 (1) IN GENERAL.—Any premium pay received
6 by a covered employee for covered services shall be
7 disregarded in calculating the aggregate of the basic
8 pay and premium pay for the covered employee for
9 purposes of applying the limitation on premium pay
10 under section 5547(a) of title 5, United States Code.

11 (2) LIMITATION.—A covered employee may be
12 paid premium pay that is disregarded under para-
13 graph (1) only to the extent that the aggregate of
14 the basic pay and premium pay paid to that covered
15 employee in the applicable calendar year, including
16 premium pay that is disregarded under that para-
17 graph, does not exceed the rate of basic pay for a
18 position at level II of the Executive Schedule under
19 section 5313 of title 5, United States Code, as in ef-
20 fect at the end of that calendar year.

21 (c) APPLICATION.—If the application of subsection
22 (b) results in the payment of additional pay to a covered
23 employee of a type that is normally creditable as basic pay
24 for retirement or any other purpose, that additional pay
25 shall not—

1 (1) be considered to be basic pay of the covered
2 employee for any purpose; or

3 (2) be used in computing a lump-sum payment
4 to the covered employee for accumulated and ac-
5 crued annual leave under section 5551 or 5552 of
6 title 5, United States Code.

7 (d) AMENDMENT.—Section 5542(a)(5) of title 5,
8 United States Code, is amended by inserting “, the De-
9 partment of Commerce,” after “Interior”.

10 (e) EFFECTIVE DATE.—This section and the amend-
11 ment made by this section shall take effect as if enacted
12 on January 1, 2020.

13 (f) DERIVATION OF FUNDS.—Any amounts used to
14 pay covered employees for covered services shall not be
15 derived from amounts made available to the Administra-
16 tion or amounts saved by reducing the number of full-
17 time-equivalent employees of the Administration.

18 (g) POLICIES AND PROCEDURES FOR HEALTH,
19 SAFETY, AND WELL-BEING.—The Under Secretary shall
20 maintain policies and procedures that ensure that the de-
21 ployment of a covered employee to perform a covered serv-
22 ice will not compromise the health, safety, and well-being
23 of the covered employee.

1 **SEC. 13. GOVERNMENT ACCOUNTABILITY OFFICE REPORT**
2 **ON INTERAGENCY WILDFIRE FORECASTING,**
3 **PREVENTION, PLANNING, AND MANAGEMENT**
4 **BODIES.**

5 Not later than 1 year after the date of the enactment
6 of this Act, the Comptroller General of the United States
7 shall submit to Congress a report that—

8 (1) identifies all Federal interagency bodies es-
9 tablished for the purpose of wildfire forecasting, pre-
10 vention, planning, and management (such as wildfire
11 councils, commissions, and workgroups), including—

12 (A) the Wildland Fire Leadership Council;

13 (B) the National Interagency Fire Center;

14 (C) the Wildland Fire Management Policy
15 Committee;

16 (D) the Wildland Fire Mitigation and
17 Management Commission;

18 (E) the National Interagency Fire Center;

19 (F) the National Interagency Coordination
20 Center;

21 (G) the National Predictive Services Over-
22 sight Group;

23 (H) the Interagency Council for Advancing
24 Meteorological Services;

25 (I) the National Wildfire Coordinating
26 Group;

1 (~~J~~) the National Multi-Agency Coordi-
2 nating Group; and

3 (~~K~~) the Mitigation Framework Leadership
4 Group;

5 (2) evaluates the roles, functionality, and utility
6 of such interagency bodies;

7 (3) evaluates the progress, performance, and
8 implementation of such interagency bodies;

9 (4) assesses efficacy and identifies potential
10 overlap and duplication of such interagency bodies in
11 carrying out interagency collaboration with respect
12 to wildfire prevention, planning, and management;
13 and

14 (5) includes such other recommendations as the
15 Comptroller General determines are appropriate to
16 streamline and improve wildfire forecasting, preven-
17 tion, planning, and management, including rec-
18 ommendations regarding the interagency bodies for
19 which the addition of the Administration is nec-
20 essary to improve wildfire forecasting, prevention,
21 planning, and management.

1 **SEC. 14. AMENDMENTS TO INFRASTRUCTURE INVESTMENT**
2 **AND JOBS ACT RELATING TO WILDFIRE MITI-**
3 **GATION.**

4 The Infrastructure Investment and Jobs Act (Public
5 Law 117-58; 135 Stat. 429) is amended—

6 (1) in section 70202—

7 (A) in paragraph (1)—

8 (i) in subparagraph (J), by striking “;
9 and” and inserting a semicolon;

10 (ii) in subparagraph (K), by striking
11 the period at the end and inserting a semi-
12 colon; and

13 (iii) by adding at the end the fol-
14 lowing:

15 “(L) the Committee on Commerce,
16 Science, and Transportation of the Senate;
17 and”;

18 “(M) the Committee on Science, Space,
19 and Technology of the House of Representa-
20 tives.”; and

21 (B) in paragraph (6)—

22 (i) in subparagraph (B), by striking “;
23 and” and inserting a semicolon;

24 (ii) in subparagraph (C), by striking
25 the period at the end and inserting “;
26 and”; and

1 (iii) by adding at the end the fol-
 2 lowing:

3 “(D) The Secretary of Commerce, acting
 4 through the Under Secretary of Commerce for
 5 Oceans and Atmosphere.”; and
 6 (2) in section 70203(b)(1)(B)—

7 (A) in the matter preceding clause (i), by
 8 striking “9” and inserting “not fewer than 10”;
 9 (B) in clause (i)—

10 (i) in subclause (IV), by striking “;
 11 and” and inserting a semicolon;

12 (ii) in subclause (V), by adding “and”
 13 at the end; and

14 (iii) by adding at the end the fol-
 15 lowing:

16 “(VI) the National Oceanic and
 17 Atmospheric Administration.”;

18 (C) in clause (iv), by striking “; and” and
 19 inserting a semicolon; and

20 (D) by adding at the end the following:

21 “(vi) if the Secretaries determine it to
 22 be appropriate, 1 or more representatives
 23 from the relevant line offices of the Na-
 24 tional Oceanic and Atmospheric Adminis-
 25 tration; and”.

1 **SEC. 15. WILDFIRE TECHNOLOGY MODERNIZATION AMEND-**
 2 **MENTS.**

3 Section 1114 of the John D. Dingell, Jr. Conserva-
 4 tion, Management, and Recreation Act (43 U.S.C. 1748b-
 5 1) is amended—

6 (1) in subsection (c)(3), by inserting “the Na-
 7 tional Oceanic and Atmospheric Administration,”
 8 after “Federal Aviation Administration,”;

9 (2) in subsection (c)(2)—

10 (A) by redesignating subparagraph (B) as
 11 subparagraph (C); and

12 (B) by inserting after subparagraph (A)
 13 the following:

14 “(B) CONSULTATION.—

15 “(i) IN GENERAL.—In carrying out
 16 subparagraph (A), the Secretaries shall
 17 consult with the Under Secretary of Com-
 18 merce for Oceans and Atmosphere regard-
 19 ing any development of impact-based deci-
 20 sion support services that relate to wildlife-
 21 related activities of the National Oceanic
 22 and Atmospheric Administration.

23 “(ii) DEFINITION OF IMPACT-BASED
 24 DECISION SUPPORT SERVICES.—In this
 25 subparagraph, the term ‘impact-based deci-
 26 sion support services’ means forecast ad-

1 vice and interpretative services the Na-
2 tional Oceanic and Atmospheric Adminis-
3 tration provides to help core partners, such
4 as emergency personnel and public safety
5 officials, make decisions when weather,
6 water, and climate impact the lives and
7 livelihoods of the people of the United
8 States.”; and

9 ~~(3)~~ in subsection ~~(f)~~—

10 (A) by redesignating paragraphs ~~(1)~~ and
11 ~~(2)~~ as subparagraphs (A) and (B), respectively,
12 and moving such subparagraphs, as so redesign-
13 ated, 2 ems to the right;

14 (B) by striking “The Secretaries” and in-
15 serting the following:

16 “~~(1)~~ IN GENERAL.—The Secretaries”; and

17 (C) by adding at the end the following:

18 “~~(2)~~ COLLABORATION.—In carrying out para-
19 graph ~~(1)~~, the Secretaries shall collaborate with the
20 Under Secretary of Commerce for Oceans and At-
21 mosphere to improve coordination, utility of systems
22 and assets, and interoperability of data for smoke
23 prediction, forecasting, and modeling.”.

1 **SEC. 16. COOPERATION; COORDINATION; SUPPORT TO NON-**
2 **FEDERAL ENTITIES.**

3 (a) COOPERATION.—Each Federal agency shall co-
4 operate and coordinate with the Under Secretary, as ap-
5 propriate, in carrying out this Act and the amendments
6 made by this Act.

7 (b) COORDINATION.—

8 (1) IN GENERAL.—In meeting the requirements
9 under this Act and the amendments made by this
10 Act, the Under Secretary shall coordinate, and as
11 appropriate, establish agreements with Federal and
12 external partners to fully use and leverage existing
13 assets, systems, networks, technologies, and sources
14 of data.

15 (2) INCLUSIONS.—Coordination carried out
16 under paragraph (1) shall include coordination
17 with—

18 (A) the National Interagency Fire Center,
19 including the Predictive Services Program that
20 provides impact-based decision support services
21 to the wildland fire community at the Geo-
22 graphic Area Coordination Center and the Na-
23 tional Interagency Coordination Center;

24 (B) the National Wildfire Coordinating
25 Group; and

1 (C) relevant interagency bodies identified
2 in the report required by section 13.

3 ~~(3) CONSULTATION.~~—In carrying out this sub-
4 section, the Under Secretary shall consult with Fed-
5 eral partners including—

6 (A) the National Aeronautics and Space
7 Administration;

8 (B) the Department of the Interior;

9 (C) the Federal Emergency Management
10 Agency;

11 (D) the National Science Foundation;

12 (E) the United States Geological Survey;

13 (F) the Department of Agriculture;

14 (G) the Environmental Protection Agency;

15 (H) the Department of Energy;

16 (I) the Department of Defense;

17 (J) the National Institute of Standards
18 and Technology; and

19 (K) such other departments and agencies
20 as the Under Secretary considers relevant.

21 (c) COORDINATION WITH NON-FEDERAL ENTI-
22 TIES.—Not later than 540 days after the date of the en-
23 actment of this Act, the Under Secretary shall develop and
24 submit to the appropriate committees of Congress a proe-
25 cess for annual coordination with Tribal, State, and local

1 governments to assist the development of improved fire
2 weather products and services.

3 (d) ~~SUPPORT TO NON-FEDERAL ENTITIES.~~—In ear-
4 rying out the activities under this Act and the amend-
5 ments made by this Act, the Under Secretary may provide
6 support to non-Federal entities by making funds and re-
7 sources available through—

8 (1) competitive grants;

9 (2) contracts under the mobility program under
10 subchapter VI of chapter 33 of title 5, United States
11 Code (commonly referred to as the “Intergovern-
12 mental Personnel Act Mobility Program”);

13 (3) cooperative agreements; and

14 (4) colocation agreements as described in sec-
15 tion 502 of the National Oceanic and Atmospheric
16 Administration Commissioned Officer Corps Amend-
17 ments Act of 2020 (33 U.S.C. 851 note pree.).

18 **SEC. 17. INTERNATIONAL COORDINATION.**

19 (a) ~~IN GENERAL.~~—The Under Secretary may develop
20 collaborative relationships and agreements with foreign
21 partners and counterparts to address transboundary
22 issues pertaining to wildfires, fire weather, smoke, air
23 quality, and associated conditions and hazards or other
24 relevant meteorological phenomena, as appropriate, to fa-
25 cilitate full and open exchange of data and information.

1 (b) **CONSULTATION.**—In carrying out activities under
2 this section, the Under Secretary shall consult with the
3 Department of State and such other Federal partners as
4 the Under Secretary considers relevant.

5 **SEC. 18. SUBMISSIONS TO CONGRESS REGARDING THE**
6 **FIRE WEATHER SERVICES PROGRAM, INCI-**
7 **DENT METEOROLOGIST WORKFORCE NEEDS,**
8 **AND NATIONAL WEATHER SERVICE WORK-**
9 **FORCE SUPPORT.**

10 (a) **REPORT TO CONGRESS.**—Not later than 540 days
11 after the date of the enactment of this Act, the Under
12 Secretary shall submit to the appropriate committees of
13 Congress—

- 14 (1) the plan described in subsection (b);
15 (2) the assessment described in subsection (c);
16 and
17 (3) the assessment described in subsection (d).

18 (b) **FIRE WEATHER SERVICES PROGRAM PLAN.**—

19 (1) **ELEMENTS.**—The plan submitted under
20 subsection (a)(1) shall detail—

- 21 (A) the observational data, modeling re-
22 quirements, ongoing computational needs, re-
23 search, development, and technology transfer
24 activities, data management, skilled-personnel
25 requirements, engagement with relevant Federal

1 emergency and land management agencies and
2 partners, and corresponding resources and
3 timelines necessary to achieve the functions de-
4 scribed in subsection (b) of section 3 and the
5 priorities described in subsection (e) of such
6 section; and

7 (B) plans and needs for all other activities
8 and requirements under this Act and the
9 amendments made by this Act.

10 (2) SUBMITTAL OF ANNUAL BUDGET FOR
11 PLAN.—Following completion of the plan submitted
12 under subsection (a)(1), the Under Secretary shall,
13 not less frequently than once each year concurrent
14 with the submission of the budget by the President
15 to Congress under section 1105 of title 31, submit
16 to Congress a proposed budget corresponding with
17 the elements detailed in the plan.

18 (c) INCIDENT METEOROLOGIST WORKFORCE NEEDS
19 ASSESSMENT.—

20 (1) IN GENERAL.—The Under Secretary shall
21 conduct a workforce needs assessment on the cur-
22 rent and future demand for additional incident me-
23 teorologists for wildfires and other high-impact fire
24 weather events.

1 (2) ELEMENTS.—The assessment required by
2 paragraph (1) shall include the following:

3 (A) A description of staffing levels as of
4 the date on which the assessment is submitted
5 under subsection (a)(2) and projected future
6 staffing levels.

7 (B) An assessment of the state of the in-
8 frastructure of the National Weather Service as
9 of the date on which the assessment is sub-
10 mitted and future needs of such infrastructure
11 in order to meet current and future demands,
12 including with respect to information technology
13 support and logistical and administrative oper-
14 ations.

15 (3) CONSIDERATIONS.—In conducting the as-
16 sessment required by paragraph (1), the Under Sec-
17 retary shall consider factors including projected eli-
18 mate conditions, infrastructure, all hazard meteorolo-
19 gical response system equipment, user needs, and
20 feedback from relevant stakeholders.

21 (d) SUPPORT SERVICES ASSESSMENT.—

22 (1) IN GENERAL.—The Under Secretary shall
23 conduct a workforce support services assessment
24 with respect to employees of the National Weather
25 Service engaged in emergency response.

1 (2) **ELEMENTS.**—The assessment required by
2 paragraph (1) shall include the following:

3 (A) An assessment of need for further sup-
4 port of employees of the National Weather
5 Service engaged in emergency response through
6 services provided by the Public Health Service.

7 (B) A detailed assessment of appropria-
8 tions required to secure the level of support
9 services needed as identified in the assessment
10 described in subparagraph (A).

11 (3) **ADDITIONAL SUPPORT SERVICES.**—Fol-
12 lowing the completion of the assessment required by
13 paragraph (1), the Under Secretary shall seek to ac-
14 quire additional support services to meet the needs
15 identified in the assessment.

16 **SEC. 19. AUTHORIZATION OF APPROPRIATIONS.**

17 There is authorized to be appropriated to the Admin-
18 istration to carry out this Act and the amendments made
19 by this Act—

20 (1) \$55,000,000 for fiscal year 2023;

21 (2) \$125,000,000 for fiscal year 2024;

22 (3) \$135,000,000 for fiscal year 2025;

23 (4) \$150,000,000 for fiscal year 2026; and

24 (5) \$200,000,000 for fiscal year 2027.

1 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

2 (a) *SHORT TITLE.*—*This Act may be cited as the “Fire*
 3 *Ready Nation Act of 2022”.*

4 (b) *TABLE OF CONTENTS.*—*The table of contents for*
 5 *this Act is as follows:*

Sec. 1. Short title; table of contents.

Sec. 2. Definitions.

Sec. 3. Establishment of fire weather services program.

Sec. 4. National Oceanic and Atmospheric Administration data management.

Sec. 5. Digital fire weather services and data management.

Sec. 6. High-performance computing.

Sec. 7. Government Accountability Office report on fire weather services program.

Sec. 8. Fire weather testbed.

Sec. 9. Fire weather surveys and assessments.

Sec. 10. Incident Meteorologist Service.

Sec. 11. Automated surface observing system.

Sec. 12. Emergency response activities.

Sec. 13. Government Accountability Office report on interagency wildfire forecasting, prevention, planning, and management bodies.

Sec. 14. Amendments to Infrastructure Investment and Jobs Act relating to wildfire mitigation.

Sec. 15. Wildfire technology modernization amendments.

Sec. 16. Cooperation; coordination; support to non-Federal entities.

Sec. 17. International coordination.

Sec. 18. Submissions to Congress regarding the fire weather services program, incident meteorologist workforce needs, and National Weather Service workforce support.

Sec. 19. Government Accountability Office report; Fire Science and Technology Working Group; strategic plan.

Sec. 20. Fire weather rating system.

Sec. 21. Avoidance of duplication.

Sec. 22. Authorization of appropriations.

6 **SEC. 2. DEFINITIONS.**

7 *In this Act:*

8 (1) *ADMINISTRATION.*—*The term “Administra-*
 9 *tion” means the National Oceanic and Atmospheric*
 10 *Administration.*

11 (2) *APPROPRIATE COMMITTEES OF CONGRESS.*—
 12 *The term “appropriate committees of Congress”*
 13 *means—*

1 (A) *the Committee on Commerce, Science,*
2 *and Transportation of the Senate; and*

3 (B) *the Committee on Science, Space, and*
4 *Technology of the House of Representatives.*

5 (3) *EARTH SYSTEM MODEL.—The term “Earth*
6 *system model” means a mathematical model con-*
7 *taining all relevant components of the Earth, namely*
8 *the atmosphere, oceans, land, cryosphere, and bio-*
9 *sphere.*

10 (4) *FIRE ENVIRONMENT.—The term “fire envi-*
11 *ronment” means—*

12 (A) *the environmental conditions, such as*
13 *soil moisture, vegetation, topography, snowpack,*
14 *atmospheric temperature, moisture, and wind,*
15 *that influence—*

16 (i) *fuel and fire behavior; and*

17 (ii) *smoke dispersion and transport;*

18 *and*

19 (B) *the associated environmental impacts*
20 *occurring during and after fire events.*

21 (5) *FIRE WEATHER.—The term “fire weather”*
22 *means the weather conditions that influence the start,*
23 *spread, character, or behavior of wildfire or fires at*
24 *the wildland-urban interface and relevant meteorolog-*
25 *ical and chemical phenomena, including air quality,*

1 *smoke, and meteorological parameters such as relative*
2 *humidity, air temperature, wind speed and direction,*
3 *and atmospheric composition and chemistry, includ-*
4 *ing emissions and mixing heights.*

5 (6) *IMPACT-BASED DECISION SUPPORT SERV-*
6 *ICES.—The term “impact-based decision support serv-*
7 *ices” means forecast advice and interpretative services*
8 *the Administration provides to help core partners,*
9 *such as emergency personnel and public safety offi-*
10 *cial, make decisions when weather, water, and cli-*
11 *mate impact the lives and livelihoods of the people of*
12 *the United States.*

13 (7) *SEASONAL.—The term “seasonal” has the*
14 *meaning given that term in section 2 of the Weather*
15 *Research and Forecasting Innovation Act of 2017 (15*
16 *U.S.C. 8501).*

17 (8) *SECRETARY.—The term “Secretary” means*
18 *the Secretary of Commerce.*

19 (9) *SMOKE.—The term “smoke” means emis-*
20 *sions, including the gases and particles released into*
21 *the air as a result of combustion.*

22 (10) *STATE.—The term “State” means a State,*
23 *the District of Columbia, the Commonwealth of Puer-*
24 *to Rico, Guam, American Samoa, the Commonwealth*
25 *of the Northern Mariana Islands, the United State*

1 *Virgin Islands, the Federated States of Micronesia,*
2 *the Republic of the Marshall Islands, or the Republic*
3 *of Palau.*

4 (11) *SUBSEASONAL.*—*The term “subseasonal”*
5 *has the meaning given that term in section 2 of the*
6 *Weather Research and Forecasting Innovation Act of*
7 *2017 (15 U.S.C. 8501).*

8 (12) *TRIBAL GOVERNMENT.*—*The term “Tribal*
9 *government” means the recognized governing body of*
10 *any Indian or Alaska Native tribe, band, nation,*
11 *pueblo, village, community, component band, or com-*
12 *ponent reservation, individually identified (including*
13 *parenthetically) in the list published most recently as*
14 *of the date of enactment of this Act pursuant to sec-*
15 *tion 104 of the Federally Recognized Indian Tribe*
16 *List Act of 1994 (25 U.S.C. 5131).*

17 (13) *UNDER SECRETARY.*—*The term “Under*
18 *Secretary” means the Under Secretary of Commerce*
19 *for Oceans and Atmosphere.*

20 (14) *WEATHER ENTERPRISE.*—*The term “weath-*
21 *er enterprise” has the meaning given that term in sec-*
22 *tion 2 of the Weather Research and Forecasting Inno-*
23 *vation Act of 2017 (15 U.S.C. 8501).*

24 (15) *WILDFIRE.*—*The term “wildfire” means*
25 *any non-structure fire that occurs in vegetation or*

1 *natural fuels, originating from an unplanned igni-*
2 *tion.*

3 (16) *WILDLAND-URBAN INTERFACE.*—*The term*
4 *“wildland-urban interface” means the area, zone, or*
5 *region of transition between unoccupied or undevel-*
6 *oped land and human development where structures*
7 *and other human development meet or intermingle*
8 *with undeveloped wildland or vegetative fuels.*

9 **SEC. 3. ESTABLISHMENT OF FIRE WEATHER SERVICES PRO-**
10 **GRAM.**

11 (a) *IN GENERAL.*—*The Under Secretary shall establish*
12 *and maintain a coordinated fire weather services program*
13 *among the offices of the Administration in existence as of*
14 *the date of the enactment of this Act and designated by the*
15 *Under Secretary.*

16 (b) *PROGRAM FUNCTIONS.*—*The functions of the pro-*
17 *gram established under subsection (a), consistent with the*
18 *priorities described in section 101 of the Weather Research*
19 *and Forecasting Innovation Act of 2017 (15 U.S.C. 8511),*
20 *shall be—*

21 (1) *to support readiness, responsiveness, under-*
22 *standing, and overall resilience of the United States*
23 *to wildfires, fire weather, smoke, and other associated*
24 *conditions, hazards, and impacts in built and natural*
25 *environments and at the wildland-urban interface;*

1 (2) to collaboratively develop and disseminate
2 accurate, precise, effective, and timely risk commu-
3 nications, forecasts, watches, and warnings relating to
4 wildfires, fire weather, smoke, and other associated
5 conditions, hazards, and impacts, as applicable, with
6 Federal land management agencies;

7 (3) to partner with and support the public, Fed-
8 eral, State, and Tribal governments, and academic
9 and local partners through the development of capa-
10 bilities, impact-based decision support services, and
11 overall service delivery and utility;

12 (4) to conduct and support research and develop-
13 ment of new and innovative models, technologies,
14 techniques, products, systems, processes, and proce-
15 dures to improve understanding of wildfires, fire
16 weather, air quality, and the fire environment;

17 (5) to develop strong research-to-operations and
18 operations-to-research transitions, in order to facili-
19 tate delivery of products, services, and tools to oper-
20 ational users and platforms; and

21 (6) to develop, in coordination with Federal land
22 management agencies, impact-based decision support
23 services that operationalize and integrate the func-
24 tions described in paragraphs (1) through (5) in

1 *order to provide comprehensive impact-based decision*
2 *support services that encompass the fire environment.*

3 *(c) PROGRAM PRIORITIES.—In developing and imple-*
4 *menting the program established under subsection (a), the*
5 *Under Secretary shall prioritize—*

6 *(1) development of a fire weather-enabled Earth*
7 *system model and data assimilation systems that—*

8 *(A) are capable of prediction and fore-*
9 *casting across relevant spatial and temporal*
10 *timescales;*

11 *(B) include variables associated with fire*
12 *weather, air quality from smoke, and the fire en-*
13 *vironment;*

14 *(C) improve understanding of the connec-*
15 *tions between fire weather and modes of climate*
16 *variability; and*

17 *(D) incorporate emerging techniques such as*
18 *artificial intelligence, machine learning, and*
19 *cloud computing;*

20 *(2) advancement of existing and new observa-*
21 *tional capabilities, including satellite-, airborne-, air-*
22 *, and ground-based systems and technologies and so-*
23 *cial networking and other public information-gath-*
24 *ering applications that—*

25 *(A) identify—*

- 1 (i) *high-risk pre-ignition conditions;*
2 (ii) *conditions that influence fire be-*
3 *havior and spread including those condi-*
4 *tions that suppress active fire events; and*
5 (iii) *fire risk values;*
- 6 (B) *support real-time notification and mon-*
7 *itoring of ignitions;*
- 8 (C) *support observations and data collection*
9 *of fire weather and fire environment variables,*
10 *including smoke, for development of the model*
11 *and systems under paragraph (1); and*
- 12 (D) *support forecasts and advancing under-*
13 *standing and research of the impacts of wildfires*
14 *on human health, ecosystems, climate, transpor-*
15 *tation, and economies; and*
- 16 (3) *development and implementation of advanced*
17 *and user-oriented impact-based decision tools, science,*
18 *and technologies that—*
- 19 (A) *ensure real-time and retrospective data,*
20 *products, and services are findable, accessible,*
21 *interoperable, usable, inform further research,*
22 *and are analysis- and decision-ready;*
- 23 (B) *provide targeted information through-*
24 *out the fire lifecycle including pre-ignition, de-*

1 *tection, forecasting, post-fire, and monitoring*
2 *phases; and*

3 *(C) support early assessment of post-fire*
4 *hazards, such as air quality, debris flows,*
5 *mudslides, and flooding.*

6 *(d) PROGRAM ACTIVITIES.—In developing and imple-*
7 *menting the program established under subsection (a), the*
8 *Under Secretary may—*

9 *(1) conduct relevant physical and social science*
10 *research activities in support of the functions de-*
11 *scribed in subsection (b) and the priorities described*
12 *in subsection (c);*

13 *(2) conduct relevant activities, in coordination*
14 *with Federal land management agencies and Federal*
15 *science agencies, to assess fuel characteristics, includ-*
16 *ing moisture, loading, and other parameters used to*
17 *determine fire risk levels and outlooks;*

18 *(3) support and conduct research that assesses*
19 *impacts to marine, riverine, and other relevant eco-*
20 *systems, which may include forest and rangeland eco-*
21 *systems, resulting from activities associated with*
22 *mitigation of and response to wildfires;*

23 *(4) support and conduct attribution science re-*
24 *search relating to wildfires, fire weather, fire risk,*
25 *smoke, and associated conditions, risks, and impacts;*

1 (5) *develop smoke and air quality forecasts, fore-*
2 *cast guidance, and prescribed burn weather forecasts,*
3 *and conduct research on the impact of such forecasts*
4 *on response behavior that minimizes health-related*
5 *impacts from smoke exposure;*

6 (6) *use, in coordination with Federal land man-*
7 *agement agencies, wildland fire resource intelligence*
8 *to inform fire environment impact-based decision*
9 *support products and services for safety;*

10 (7) *work with Federal agencies to provide data,*
11 *tools, and services to support determinations by such*
12 *agencies for the implementation of mitigation meas-*
13 *ures;*

14 (8) *provide training and support to ensure effec-*
15 *tive media utilization of impact-based decision sup-*
16 *port products and guidance to the public regarding*
17 *actions needing to be taken;*

18 (9) *provide comprehensive training to ensure*
19 *staff of the program established under subsection (a)*
20 *is properly equipped to deliver the impact-based deci-*
21 *sion support products and services described in para-*
22 *graphs (1) through (6); and*

23 (10) *acquire through contracted purchase private*
24 *sector-produced observational data to fill identified*
25 *gaps, as needed.*

1 (e) *COLLABORATION; AGREEMENTS.*—

2 (1) *COLLABORATION.*—*The Under Secretary*
3 *shall, as the Under Secretary considers appropriate,*
4 *collaborate and consult with partners in the weather*
5 *and climate enterprises, academic institutions, States,*
6 *Tribal governments, local partners, and Federal agen-*
7 *cies, including land and fire management agencies, in*
8 *the development and implementation of the program*
9 *established under subsection (a).*

10 (2) *AGREEMENTS.*—*The Under Secretary may*
11 *enter into agreements in support of the functions de-*
12 *scribed in subsection (b), the priorities described in*
13 *subsection (c), the activities described in subsection*
14 *(d), and activities carried out under section 8.*

15 (f) *PROGRAM ADMINISTRATION PLAN.*—

16 (1) *IN GENERAL.*—*Not later than 180 days after*
17 *the date of the enactment of this Act, the Under Sec-*
18 *retary shall submit to the appropriate committees of*
19 *Congress a plan that details how the program estab-*
20 *lished under subsection (a) will be administered and*
21 *governed within the Administration.*

22 (2) *ELEMENTS.*—*The plan required by para-*
23 *graph (1) should include a description of—*

24 (A) *how the functions described in sub-*
25 *section (b), the priorities described in subsection*

1 (c), and the activities described in subsection (d)
 2 will be distributed among the line offices of the
 3 Administration; and

4 (B) the mechanisms in place to ensure
 5 seamless coordination among those offices.

6 **SEC. 4. NATIONAL OCEANIC AND ATMOSPHERIC ADMINIS-**
 7 **TRATION DATA MANAGEMENT.**

8 Section 301 of the Weather Research and Forecasting
 9 Innovation Act of 2017 (15 U.S.C. 8531) is amended—

10 (1) by redesignating subsections (f) and (g) as
 11 subsections (g) and (h), respectively; and

12 (2) by inserting after subsection (e) the following:

13 “(f) *DATA AVAILABILITY AND MANAGEMENT.*—

14 “(1) *IN GENERAL.*—The Under Secretary shall—

15 “(A) make data and metadata generated or
 16 collected by the National Oceanic and Atmos-
 17 pheric Administration that the Under Secretary
 18 has the legal right to redistribute fully and open-
 19 ly available, in accordance with chapter 35 of
 20 title 44, United States Code, and the Founda-
 21 tions for Evidence-Based Policymaking Act of
 22 2018 (Public Law 115–435; 132 Stat. 5529) and
 23 the amendments made by that Act, and preserve
 24 and curate such data and metadata, in accord-
 25 ance with chapter 31 of title 44, United States

1 Code (commonly known as the ‘Federal Records
2 Act of 1950’), in order to maximize use of such
3 data and metadata; and

4 “(B) manage and steward the access, archi-
5 val, and retrieval activities for the data and
6 metadata described in subparagraph (A) by—

7 “(i) using—

8 “(I) enterprise-wide infrastruc-
9 ture, emerging technologies, commercial
10 partnerships, and the skilled workforce
11 needed to provide appropriate data
12 management from collection to broad
13 access; and

14 “(II) associated information serv-
15 ices; and

16 “(ii) pursuing the maximum inter-
17 operability of data and information by—

18 “(I) leveraging data, information,
19 knowledge, and tools from across the
20 Federal Government to support equi-
21 table access, cross-sectoral collaboration
22 and innovation, and local planning
23 and decision-making; and

24 “(II) developing standards and
25 practices for the adoption and citation

1 of digital object identifiers for datasets,
2 models, and analytical tools.

3 “(2) *COLLABORATION.*—In carrying out this sub-
4 section, the Under Secretary shall collaborate with
5 such Federal partners and stakeholders as the Under
6 Secretary considers relevant—

7 “(A) to develop standards to pursue max-
8 imum interoperability of data, information,
9 knowledge, and tools across the Federal Govern-
10 ment, convert historical records into common
11 digital formats, and improve access and
12 usability of data by partners and stakeholders;

13 “(B) to identify and solicit relevant data
14 from Federal and international partners and
15 other relevant stakeholders, as the Under Sec-
16 retary considers appropriate; and

17 “(C) to develop standards and practices for
18 the adoption and citation of digital object identi-
19 fiers for datasets, models, and analytical tools.”.

20 **SEC. 5. DIGITAL FIRE WEATHER SERVICES AND DATA MAN-**
21 **AGEMENT.**

22 (a) *IN GENERAL.*—

23 (1) *DIGITAL PRESENCE.*—The Under Secretary
24 shall develop and maintain a comprehensive, central-
25 ized, and publicly accessible digital presence designed

1 *to promote findability, accessibility, interoperability,*
2 *usability, and utility of the services, tools, data, and*
3 *information produced by the program established*
4 *under section 3(a).*

5 (2) *DIGITAL PLATFORM AND TOOLS.*—*In car-*
6 *rying out paragraph (1), the Under Secretary shall*
7 *seek to ensure the digital platform and tools of the*
8 *Administration integrate geospatial data, decision*
9 *support tools, training, and best practices to provide*
10 *real-time fire weather forecasts and address fire-re-*
11 *lated issues and needs.*

12 (b) *INTERNET-BASED TOOLS.*—*In carrying out sub-*
13 *sections (a) and (b), the Under Secretary shall develop and*
14 *implement internet-based tools, such as webpages and*
15 *smartphone and other mobile applications, to increase util-*
16 *ity and access to services and products for the benefit of*
17 *users.*

18 **SEC. 6. HIGH-PERFORMANCE COMPUTING.**

19 (a) *IN GENERAL.*—*The Under Secretary shall seek to*
20 *acquire sufficient high-performance computing resources*
21 *and capacity for research, operations, and data storage in*
22 *support of the program established under section 3(a).*

23 (b) *CONSIDERATIONS.*—*In acquiring high-performance*
24 *computing capacity under subsection (a), the Under Sec-*
25 *retary shall consider requirements needed for—*

- 1 (1) *conducting research and development;*
 2 (2) *the transition of research and testbed devel-*
 3 *opments into operations;*
 4 (3) *capabilities existing in other Federal agen-*
 5 *cies and the commercial sector; and*
 6 (4) *skilled workforce development.*

7 **SEC. 7. GOVERNMENT ACCOUNTABILITY OFFICE REPORT**
 8 **ON FIRE WEATHER SERVICES PROGRAM.**

9 (a) *IN GENERAL.*—*Not later than 3 years after the*
 10 *date of the enactment of this Act, the Comptroller General*
 11 *of the United States shall submit to Congress a report on*
 12 *the program established under section 3(a).*

13 (b) *ELEMENTS.*—*The report required by subsection (a)*
 14 *shall—*

15 (1) *evaluate the performance of the program by*
 16 *establishing initial baseline capabilities and tracking*
 17 *progress made toward fully operationalizing the func-*
 18 *tions described in section 3(b); and*

19 (2) *include such other recommendations as the*
 20 *Comptroller General determines are appropriate to*
 21 *improve the program.*

22 **SEC. 8. FIRE WEATHER TESTBED.**

23 (a) *ESTABLISHMENT OF FIRE WEATHER TESTBED.*—
 24 *The Under Secretary shall establish a fire weather testbed*
 25 *that enables engagement across the Federal Government,*

1 *State and local governments, academia, private and feder-*
2 *ally funded research laboratories, the private sector, and*
3 *end-users in order to evaluate the accuracy and usability*
4 *of technology, models, fire weather products and services,*
5 *and other research to accelerate the implementation, transi-*
6 *tion to operations, and use of new capabilities by the Ad-*
7 *ministration, Federal and land management agencies, and*
8 *other relevant stakeholders.*

9 (b) *UNCREWED AIRCRAFT SYSTEMS.—*

10 (1) *IN GENERAL.—The Under Secretary shall—*

11 (A) *research and assess the role and poten-*
12 *tial of uncrewed aircraft systems to improve*
13 *data collection in support of modeling, observa-*
14 *tions, predictions, forecasts, and impact-based*
15 *decision support services;*

16 (B) *transition uncrewed aircraft systems*
17 *technologies from research to operations as the*
18 *Under Secretary considers appropriate; and*

19 (C) *coordinate with other Federal agencies*
20 *that may be developing uncrewed aircraft sys-*
21 *tems and related technologies to meet the chal-*
22 *lenges of wildland fire management.*

23 (2) *PILOT REQUIRED.—In carrying out para-*
24 *graph (1), not later than 1 year after the date of the*
25 *enactment of this Act, the Under Secretary shall con-*

1 *duct pilots of uncrewed aircraft systems for fire*
2 *weather and fire environment observations, includ-*
3 *ing—*

4 *(A) testing of unscrewed systems in ap-*
5 *proximations of real-world scenarios;*

6 *(B) assessment of the utility of meteorolog-*
7 *ical data collected from fire response and assess-*
8 *ment aircraft;*

9 *(C) input of the collected data into appro-*
10 *priate models to predict fire behavior, including*
11 *coupled atmosphere and fire models; and*

12 *(D) collection of best management practices*
13 *for deployment of unscrewed systems and other*
14 *remote data technology, including for commu-*
15 *nication and coordination between the stake-*
16 *holders described in subsection (a).*

17 *(3) PROHIBITION.—*

18 *(A) IN GENERAL.—Except as provided*
19 *under subparagraphs (B) and (C), the Under*
20 *Secretary may not procure any covered un-*
21 *manned aircraft system that is manufactured or*
22 *assembled by a covered foreign entity, which in-*
23 *cludes associated elements (consisting of commu-*
24 *nication links and the components that control*
25 *the unmanned aircraft) that are required for the*

1 operator to operate safely and efficiently in the
2 national airspace system. The Federal Acquisition
3 Security Council, in coordination with the
4 Secretary of Transportation, shall develop and
5 update a list of associated elements.

6 (B) *EXEMPTION.*—The Under Secretary, in
7 consultation with the Secretary of Homeland Se-
8 curity, is exempt from the prohibition under sub-
9 paragraph (A) if the operation or procurement is
10 necessary for the sole purpose of marine or at-
11 mospheric science or management.

12 (C) *WAIVER.*—The Under Secretary may
13 waive the prohibition under subparagraph (A)
14 on a case-by-case basis—

15 (i) with the approval of the Secretary
16 of Homeland Security or the Secretary of
17 Defense; and

18 (ii) upon notification to Congress.

19 (D) *DEFINITIONS.*—In this paragraph:

20 (i) *COVERED FOREIGN ENTITY.*—The
21 term “covered foreign entity” means an en-
22 tity included on a list developed and main-
23 tained by the Federal Acquisition Security
24 Council. The list shall include entities in
25 the following categories:

1 (I) *An entity included on the*
2 *Consolidated Screening List.*

3 (II) *Any entity that is subject to*
4 *extrajudicial direction from a foreign*
5 *government, as determined by the Sec-*
6 *retary of Homeland Security.*

7 (III) *Any entity the Secretary of*
8 *Homeland Security, in coordination*
9 *with the Director of National Intel-*
10 *ligence and the Secretary of Defense,*
11 *determines poses a national security*
12 *risk.*

13 (IV) *Any entity domiciled in the*
14 *People’s Republic of China or subject*
15 *to influence or control by the Govern-*
16 *ment of the People’s Republic of China*
17 *or the Communist Party of the People’s*
18 *Republic of China, as determined by*
19 *the Secretary of Homeland Security.*

20 (V) *Any subsidiary or affiliate of*
21 *an entity described in subclauses (I)*
22 *through (IV).*

23 (ii) *COVERED UNMANNED AIRCRAFT*
24 *SYSTEM.—The term “covered unmanned*
25 *aircraft system” has the meaning given the*

1 term “unmanned aircraft system” in sec-
2 tion 44801 of title 49, United States Code.

3 (4) SAVINGS CLAUSE.—

4 (A) IN GENERAL.—In carrying out activi-
5 ties under this subsection, the Under Secretary
6 shall ensure that any testing or deployment of
7 uncrewed aircraft systems follow procedures, re-
8 strictions, and protocols established by the heads
9 of the Federal agencies with statutory or regu-
10 latory jurisdiction over any airspace in which
11 wildfire response activities are conducted during
12 an active wildfire event.

13 (B) CONSULTATION AND COORDINATION.—
14 The Under Secretary shall consult and coordi-
15 nate with relevant Federal land management
16 agencies, Federal science agencies, and the Fed-
17 eral Aviation Administration to develop proc-
18 esses for the appropriate deployment of the sys-
19 tems described in subparagraph (A).

20 (c) ADDITIONAL PILOT PROJECTS.—The Under Sec-
21 retary shall establish additional pilot projects relating to
22 the fire weather testbed that may include the following ele-
23 ments:

24 (1) Advanced satellite detection products.

25 (2) Procurement and use of commercial data.

1 **SEC. 9. FIRE WEATHER SURVEYS AND ASSESSMENTS.**

2 (a) *ANNUAL POST-FIRE-WEATHER SEASON SURVEY*
3 *AND ASSESSMENT.*—

4 (1) *IN GENERAL.*—*During the second winter fol-*
5 *lowing the enactment of this Act, and each year there-*
6 *after, the Under Secretary shall conduct a post-fire-*
7 *weather season survey and assessment.*

8 (2) *ELEMENTS.*—*After conducting a post-fire-*
9 *weather season survey and assessment under para-*
10 *graph (1), the Under Secretary shall—*

11 (A) *investigate any gaps in data collected*
12 *during the assessment;*

13 (B) *identify and implement strategies and*
14 *procedures to improve program services and in-*
15 *formation dissemination;*

16 (C) *update systems, processes, strategies,*
17 *and procedures to enhance the efficiency and re-*
18 *liability of data obtained from the assessment;*

19 (D) *evaluate the accuracy and efficacy of*
20 *physical fire weather forecasting information for*
21 *each incident included in the survey and assess-*
22 *ment; and*

23 (E) *assess and refine performance measures,*
24 *as needed.*

25 (b) *SURVEYS AND ASSESSMENTS FOLLOWING INDI-*
26 *VIDUAL WILDFIRE EVENTS.*—*The Under Secretary may*

1 *conduct surveys and assessments following individual wild-*
2 *fire events as the Under Secretary determines necessary.*

3 (c) *GOAL.*—*In carrying out activities under this sec-*
4 *tion, the Under Secretary shall seek to increase the number*
5 *of post-wildfire community impact studies, including by*
6 *surveying individual and collective responses and incor-*
7 *porating other applicable topics of social science research.*

8 (d) *ANNUAL BRIEFING.*—*Not less frequently than once*
9 *each year, the Under Secretary shall provide a briefing to*
10 *the appropriate committees of Congress that provides—*

11 (1) *an overview of the fire season; and*

12 (2) *an outlook for the fire season for the coming*
13 *year.*

14 (e) *COORDINATION.*—*In conducting any survey or as-*
15 *essment under this section, the Under Secretary shall co-*
16 *ordinate with Federal, State, and local partners, Tribal*
17 *governments, private entities, and such institutions of high-*
18 *er education as the Under Secretary considers relevant in*
19 *order to—*

20 (1) *improve operations and collaboration; and*

21 (2) *optimize data collection, sharing, integration,*
22 *assimilation, and dissemination.*

23 (f) *DATA AVAILABILITY.*—*The Under Secretary shall*
24 *make the data and findings obtained from each assessment*
25 *conducted under this section available to the public in an*

1 *accessible digital format as soon as practicable after con-*
2 *ducting the assessment.*

3 (g) *SERVICE IMPROVEMENTS.*—*The Under Secretary*
4 *shall make best efforts to incorporate the results and rec-*
5 *ommendations of each assessment conducted under this sec-*
6 *tion into the research and development plan and operations*
7 *of the Administration.*

8 **SEC. 10. INCIDENT METEOROLOGIST SERVICE.**

9 (a) *ESTABLISHMENT.*—*The Under Secretary shall es-*
10 *tablish and maintain an Incident Meteorologist Service*
11 *within the National Weather Service (in this section re-*
12 *ferred to as the “Service”).*

13 (b) *INCLUSION OF EXISTING INCIDENT METEOROLO-*
14 *GISTS.*—*The Service shall include—*

15 (1) *the incident meteorologists of the Administra-*
16 *tion as of the date of the enactment of this Act; and*

17 (2) *such incident meteorologists of the Adminis-*
18 *tration as may be appointed after such date.*

19 (c) *FUNCTIONS.*—*The Service shall provide—*

20 (1) *on-site impact-based decision support services*
21 *to Federal, State, Tribal government, and local gov-*
22 *ernment emergency response agencies preceding, dur-*
23 *ing, and following wildland fires or other events that*
24 *threaten life or property, including high-impact and*
25 *extreme weather events; and*

1 (2) *support to Federal, State, Tribal government,*
2 *and local government decision makers, partners, and*
3 *stakeholders for seasonal planning.*

4 (d) *DEPLOYMENT.—The Service shall be deployed—*

5 (1) *as determined by the Under Secretary; or*

6 (2) *at the request of the head of another Federal*
7 *agency and with the approval of the Under Secretary.*

8 (e) *STAFFING AND RESOURCES.—In establishing and*
9 *maintaining the Service, the Under Secretary shall iden-*
10 *tify, acquire, and maintain adequate levels of staffing and*
11 *resources to meet user needs.*

12 (f) *SYMBOL.—*

13 (1) *IN GENERAL.—The Under Secretary may—*

14 (A) *create, adopt, and publish in the Fed-*
15 *eral Register a symbol for the Service; and*

16 (B) *restrict the use of such symbol as appro-*
17 *priate.*

18 (2) *USE OF SYMBOL.—The Under Secretary may*
19 *authorize the use of a symbol adopted under this sub-*
20 *section by any individual or entity as the Under Sec-*
21 *retary considers appropriate.*

22 (3) *CONTRACT AUTHORITY.—The Under Sec-*
23 *retary may award contracts for the creation of sym-*
24 *bols under this subsection.*

1 (4) *OFFENSE.—It shall be unlawful for any per-*
2 *son—*

3 (A) *to represent themselves as an official of*
4 *the Service absent the designation or approval of*
5 *the Under Secretary;*

6 (B) *to manufacture, reproduce, or otherwise*
7 *use any symbol adopted by the Under Secretary*
8 *under this subsection, including to sell any item*
9 *bearing such a symbol, unless authorized by the*
10 *Under Secretary; or*

11 (C) *to violate any regulation promulgated*
12 *by the Secretary under this subsection.*

13 (g) *SUPPORT FOR INCIDENT METEOROLOGISTS.—The*
14 *Under Secretary shall provide resources, access to real-time*
15 *fire weather forecasts, training, administrative and*
16 *logistical support, and access to professional counseling or*
17 *other forms of support as the Under Secretary considers ap-*
18 *propriate for the betterment of the emotional and mental*
19 *health and well-being of incident meteorologists and other*
20 *employees of the Administration involved with response to*
21 *high-impact and extreme fire weather events.*

22 **SEC. 11. AUTOMATED SURFACE OBSERVING SYSTEM.**

23 (a) *JOINT ASSESSMENT AND PLAN.—*

24 (1) *IN GENERAL.—The Under Secretary, in col-*
25 *laboration with the Administrator of the Federal*

1 *Aviation Administration and the Secretary of De-*
2 *fense, shall—*

3 *(A) conduct an assessment of resources, per-*
4 *sonnel, procedures, and activities necessary to*
5 *maximize the functionality and utility of the*
6 *automated surface observing system of the United*
7 *States that identifies—*

8 *(i) key system upgrades needed to im-*
9 *prove observation quality and utility for*
10 *weather forecasting, aviation safety, and*
11 *other users;*

12 *(ii) improvements needed in observa-*
13 *tions within the planetary boundary layer,*
14 *including mixing height;*

15 *(iii) improvements needed in public*
16 *accessibility of observational data;*

17 *(iv) improvements needed to reduce la-*
18 *tency in reporting of observational data;*

19 *(v) relevant data to be collected for the*
20 *production of forecasts or forecast guidance*
21 *relating to atmospheric composition, includ-*
22 *ing particulate and air quality data, and*
23 *aviation safety;*

24 *(vi) areas of concern regarding oper-*
25 *ational continuity and reliability of the sys-*

1 *tem, which may include needs for on-night*
2 *staff, particularly in remote and rural*
3 *areas and areas where system failure would*
4 *have the greatest negative impact to the*
5 *community;*

6 *(vii) stewardship, data handling, data*
7 *distribution, and product generation needs*
8 *arising from upgrading and changing the*
9 *automated surface observation systems;*

10 *(viii) possible solutions for areas of*
11 *concern identified under clause (vi), includ-*
12 *ing with respect to the potential use of*
13 *backup systems, power and communication*
14 *system reliability, staffing needs and per-*
15 *sonnel location, and the acquisition of crit-*
16 *ical component backups and proper storage*
17 *location to ensure rapid system repair nec-*
18 *essary to ensure system operational con-*
19 *tinuity; and*

20 *(ix) research, development, and transi-*
21 *tion to operations needed to develop ad-*
22 *vanced data collection, quality control, and*
23 *distribution so that the data are provided to*
24 *models, users, and decision support systems*
25 *in a timely manner; and*

1 *(B) develop and implement a plan that ad-*
2 *resses the findings of the assessment conducted*
3 *under subparagraph (A), including by seeking*
4 *and allocating resources necessary to ensure that*
5 *system upgrades are standardized across the Ad-*
6 *ministration, the Federal Aviation Administra-*
7 *tion, and the Department of Defense to the extent*
8 *practicable.*

9 (2) *STANDARDIZATION.—Any system standard-*
10 *ization implemented under paragraph (1)(B) shall*
11 *not impede activities to upgrade or improve indi-*
12 *vidual units of the system.*

13 (3) *REMOTE AUTOMATIC WEATHER STATION CO-*
14 *ORDINATION.—The Under Secretary, in collaboration*
15 *with relevant Federal agencies and the National*
16 *Interagency Fire Center, shall assess and develop co-*
17 *operative agreements to improve coordination, inter-*
18 *operability standards, operations, and placement of*
19 *remote automatic weather stations for the purpose of*
20 *improving utility and coverage of remote automatic*
21 *weather stations, automated surface observation sys-*
22 *tems, smoke monitoring platforms, and other similar*
23 *stations and systems for weather and climate oper-*
24 *ations.*

25 (b) *REPORT TO CONGRESS.—*

1 (1) *IN GENERAL.*—Not later than 2 years after
2 the date of the enactment of this Act, the Under Sec-
3 retary, in collaboration with the Administrator of the
4 Federal Aviation Administration and the Secretary of
5 Defense, shall submit to the appropriate committees of
6 Congress a report that—

7 (A) details the findings of the assessment re-
8 quired by subparagraph (A) of subsection (a)(1);
9 and

10 (B) the plan required by subparagraph (B)
11 of such subsection.

12 (2) *ELEMENTS.*—The report required by para-
13 graph (1) shall include a detailed assessment of ap-
14 propriations required—

15 (A) to address the findings of the assessment
16 required by subparagraph (A) of subsection
17 (a)(1); and

18 (B) to implement the plan required by sub-
19 paragraph (B) of such subsection.

20 (c) *GOVERNMENT ACCOUNTABILITY OFFICE RE-*
21 *PORT.*—Not later than 4 years after the date of the enact-
22 *ment of this Act, the Comptroller General of the United*
23 *States shall submit to Congress a report that—*

24 (1) evaluates the functionality, utility, reli-
25 ability, and operational status of the automated sur-

1 *face observing system across the Administration, the*
2 *Federal Aviation Administration, and the Depart-*
3 *ment of Defense;*

4 *(2) evaluates the progress, performance, and im-*
5 *plementation of the plan required by subsection*
6 *(a)(1)(B);*

7 *(3) assesses the efficacy of cross-agency collabora-*
8 *tion and stakeholder engagement in carrying out the*
9 *plan and provides recommendations to improve such*
10 *activities;*

11 *(4) evaluates the operational continuity and reli-*
12 *ability of the system, particularly in remote and*
13 *rural areas and areas where system failure would*
14 *have the greatest negative impact to the community,*
15 *and provides recommendations to improve such con-*
16 *tinuity and reliability;*

17 *(5) assesses Federal coordination regarding the*
18 *remote automatic weather station network, air re-*
19 *source advisors, and other Federal observing assets*
20 *used for weather and climate modeling and response*
21 *activities, and provides recommendations for im-*
22 *provements; and*

23 *(6) includes such other recommendations as the*
24 *Comptroller General determines are appropriate to*
25 *improve the system.*

1 **SEC. 12. EMERGENCY RESPONSE ACTIVITIES.**

2 (a) *DEFINITIONS.*—*In this section:*

3 (1) *BASIC PAY.*—*The term “basic pay” includes*
4 *any applicable locality-based comparability payment*
5 *under section 5304 of title 5, United States Code, any*
6 *applicable special rate supplement under section 5305*
7 *of such title, or any equivalent payment under a*
8 *similar provision of law.*

9 (2) *COVERED EMPLOYEE.*—*The term “covered*
10 *employee” means an employee of the Department of*
11 *Commerce.*

12 (3) *COVERED SERVICES.*—*The term “covered*
13 *services” means services performed by a covered em-*
14 *ployee while serving as an incident meteorologist ac-*
15 *companying a wildland firefighter crew.*

16 (4) *EMPLOYEE.*—*The term “employee” has the*
17 *meaning given that term in section 2105 of title 5,*
18 *United States Code.*

19 (5) *PREMIUM PAY.*—*The term “premium pay”*
20 *means premium pay for the purposes of section*
21 *5547(a) of title 5, United States Code.*

22 (b) *WAIVER.*—

23 (1) *IN GENERAL.*—*Any premium pay received by*
24 *a covered employee for covered services shall be dis-*
25 *regarded in calculating the aggregate of the basic pay*
26 *and premium pay for the covered employee for pur-*

1 *poses of applying the limitation on premium pay*
2 *under section 5547(a) of title 5, United States Code.*

3 (2) *LIMITATION.—A covered employee may be*
4 *paid premium pay that is disregarded under para-*
5 *graph (1) only to the extent that the aggregate of the*
6 *basic pay and premium pay paid to that covered em-*
7 *ployee in the applicable calendar year, including pre-*
8 *mium pay that is disregarded under that paragraph,*
9 *does not exceed the rate of basic pay for a position*
10 *at level II of the Executive Schedule under section*
11 *5313 of title 5, United States Code, as in effect at the*
12 *end of that calendar year.*

13 (c) *APPLICATION.—If the application of subsection (b)*
14 *results in the payment of additional pay to a covered em-*
15 *ployee of a type that is normally creditable as basic pay*
16 *for retirement or any other purpose, that additional pay*
17 *shall not—*

18 (1) *be considered to be basic pay of the covered*
19 *employee for any purpose; or*

20 (2) *be used in computing a lump-sum payment*
21 *to the covered employee for accumulated and accrued*
22 *annual leave under section 5551 or 5552 of title 5,*
23 *United States Code.*

1 (d) *AMENDMENT.*—Section 5542(a)(5) of title 5,
 2 *United States Code*, is amended by inserting “, the Depart-
 3 *ment of Commerce*,” after “*Interior*”.

4 (e) *EFFECTIVE DATE.*—This section and the amend-
 5 *ment made by this section shall take effect as if enacted*
 6 *on January 1, 2020.*

7 (f) *POLICIES AND PROCEDURES FOR HEALTH, SAFE-*
 8 *TY, AND WELL-BEING.*—The Under Secretary shall main-
 9 *tain polices and procedures to promote the health, safety,*
 10 *and well-being of covered employees.*

11 **SEC. 13. GOVERNMENT ACCOUNTABILITY OFFICE REPORT**
 12 **ON INTERAGENCY WILDFIRE FORECASTING,**
 13 **PREVENTION, PLANNING, AND MANAGEMENT**
 14 **BODIES.**

15 *Not later than 1 year after the date of the enactment*
 16 *of this Act, the Comptroller General of the United States*
 17 *shall submit to Congress a report that—*

18 (1) *identifies all Federal interagency bodies es-*
 19 *tablished for the purpose of wildfire forecasting, pre-*
 20 *vention, planning, and management (such as wildfire*
 21 *councils, commissions, and workgroups), including—*

22 (A) *the Wildland Fire Leadership Council;*

23 (B) *the National Interagency Fire Center;*

24 (C) *the Wildland Fire Management Policy*

25 *Committee;*

1 (D) the Wildland Fire Mitigation and Man-
2 agement Commission;

3 (E) the Joint Science Fire Program;

4 (F) the National Interagency Coordination
5 Center;

6 (G) the National Predictive Services Over-
7 sight Group;

8 (H) the Interagency Council for Advancing
9 Meteorological Services;

10 (I) the National Wildfire Coordinating
11 Group;

12 (J) the National Multi-Agency Coordinating
13 Group; and

14 (K) the Mitigation Framework Leadership
15 Group;

16 (2) evaluates the roles, functionality, and utility
17 of such interagency bodies;

18 (3) evaluates the progress, performance, and im-
19 plementation of such interagency bodies;

20 (4) assesses efficacy and identifies potential over-
21 lap and duplication of such interagency bodies in
22 carrying out interagency collaboration with respect to
23 wildfire prevention, planning, and management; and

24 (5) includes such other recommendations as the
25 Comptroller General determines are appropriate to

1 *streamline and improve wildfire forecasting, preven-*
 2 *tion, planning, and management, including rec-*
 3 *ommendations regarding the interagency bodies for*
 4 *which the addition of the Administration is necessary*
 5 *to improve wildfire forecasting, prevention, planning,*
 6 *and management.*

7 **SEC. 14. AMENDMENTS TO INFRASTRUCTURE INVESTMENT**
 8 **AND JOBS ACT RELATING TO WILDFIRE MITI-**
 9 **GATION.**

10 *The Infrastructure Investment and Jobs Act (Public*
 11 *Law 117–58; 135 Stat. 429) is amended—*

12 *(1) in section 70202—*

13 *(A) in paragraph (1)—*

14 *(i) in subparagraph (J), by striking “;*
 15 *and” and inserting a semicolon;*

16 *(ii) in subparagraph (K), by striking*
 17 *the period at the end and inserting a semi-*
 18 *colon; and*

19 *(iii) by adding at the end the fol-*
 20 *lowing:*

21 *“(L) the Committee on Commerce, Science,*
 22 *and Transportation of the Senate; and*

23 *“(M) the Committee on Science, Space, and*
 24 *Technology of the House of Representatives.”;*
 25 *and*

1 (B) in paragraph (6)—

2 (i) in subparagraph (B), by striking “;
3 and” and inserting a semicolon;

4 (ii) in subparagraph (C), by striking
5 the period at the end and inserting “; and”;
6 and

7 (iii) by adding at the end the fol-
8 lowing:

9 “(D) The Secretary of Commerce, acting
10 through the Under Secretary of Commerce for
11 Oceans and Atmosphere.”; and

12 (2) in section 70203(b)(1)(B)—

13 (A) in the matter preceding clause (i), by
14 striking “9” and inserting “not fewer than 10”;

15 (B) in clause (i)—

16 (i) in subclause (IV), by striking “;
17 and” and inserting a semicolon;

18 (ii) in subclause (V), by adding “and”
19 at the end; and

20 (iii) by adding at the end the fol-
21 lowing:

22 “(VI) the National Oceanic and
23 Atmospheric Administration.”;

24 (C) in clause (iv), by striking “; and” and
25 inserting a semicolon; and

1 (D) by adding at the end the following:

2 “*(vi) if the Secretaries determine it to*
 3 *be appropriate, 1 or more representatives*
 4 *from the relevant line offices of the National*
 5 *Oceanic and Atmospheric Administration;*
 6 *and”.*

7 **SEC. 15. WILDFIRE TECHNOLOGY MODERNIZATION AMEND-**
 8 **MENTS.**

9 Section 1114 of the John D. Dingell, Jr. Conservation,
 10 Management, and Recreation Act (43 U.S.C. 1748b–1) is
 11 amended—

12 (1) in subsection (c)(3), by inserting “*the Na-*
 13 *tional Oceanic and Atmospheric Administration,”*
 14 *after “Federal Aviation Administration,”;*

15 (2) in subsection (e)(2)—

16 (A) by redesignating subparagraph (B) as
 17 subparagraph (C); and

18 (B) by inserting after subparagraph (A) the
 19 following:

20 “(B) CONSULTATION.—

21 “(i) IN GENERAL.—*In carrying out*
 22 *subparagraph (A), the Secretaries shall con-*
 23 *sult with the Under Secretary of Commerce*
 24 *for Oceans and Atmosphere regarding any*
 25 *development of impact-based decision sup-*

1 *port services that relate to wildlife-related*
 2 *activities of the National Oceanic and At-*
 3 *mospheric Administration.*

4 “(i) *DEFINITION OF IMPACT-BASED*
 5 *DECISION SUPPORT SERVICES.—In this sub-*
 6 *paragraph, the term ‘impact-based decision*
 7 *support services’ means forecast advice and*
 8 *interpretative services the National Oceanic*
 9 *and Atmospheric Administration provides*
 10 *to help core partners, such as emergency*
 11 *personnel and public safety officials, make*
 12 *decisions when weather, water, and climate*
 13 *impact the lives and livelihoods of the peo-*
 14 *ple of the United States.”; and*

15 (3) *in subsection (f)—*

16 (A) *by redesignating paragraphs (1) and*
 17 (2) *as subparagraphs (A) and (B), respectively,*
 18 *and moving such subparagraphs, as so redesign-*
 19 *ated, 2 ems to the right;*

20 (B) *by striking “The Secretaries” and in-*
 21 *serting the following:*

22 “(1) *IN GENERAL.—The Secretaries”;* and

23 (C) *by adding at the end the following:*

24 “(2) *COLLABORATION.—In carrying out para-*
 25 *graph (1), the Secretaries shall collaborate with the*

1 *graphic Area Coordination Center and the Na-*
2 *tional Interagency Coordination Center;*

3 *(B) the National Wildfire Coordinating*
4 *Group; and*

5 *(C) relevant interagency bodies identified in*
6 *the report required by section 13.*

7 (3) *CONSULTATION.—In carrying out this sub-*
8 *section, the Under Secretary shall consult with Fed-*
9 *eral partners including—*

10 *(A) the National Aeronautics and Space*
11 *Administration;*

12 *(B) the Department of the Interior;*

13 *(C) the Federal Emergency Management*
14 *Agency;*

15 *(D) the National Science Foundation;*

16 *(E) the United States Geological Survey;*

17 *(F) the Department of Agriculture;*

18 *(G) the Environmental Protection Agency;*

19 *(H) the Department of Energy;*

20 *(I) the Department of Defense;*

21 *(J) the National Institute of Standards and*
22 *Technology; and*

23 *(K) such other departments and agencies as*
24 *the Under Secretary considers relevant.*

1 (c) *COORDINATION WITH NON-FEDERAL ENTITIES.*—
2 *Not later than 540 days after the date of the enactment of*
3 *this Act, the Under Secretary shall develop and submit to*
4 *the appropriate committees of Congress a process for annual*
5 *coordination with Tribal, State, and local governments to*
6 *assist the development of improved fire weather products*
7 *and services.*

8 (d) *SUPPORT TO NON-FEDERAL ENTITIES.*—*In car-*
9 *rying out the activities under this Act and the amendments*
10 *made by this Act, the Under Secretary may provide support*
11 *to non-Federal entities by making funds and resources*
12 *available through—*

13 (1) *competitive grants;*

14 (2) *contracts under the mobility program under*
15 *subchapter VI of chapter 33 of title 5, United States*
16 *Code (commonly referred to as the “Intergovernmental*
17 *Personnel Act Mobility Program”);*

18 (3) *cooperative agreements; and*

19 (4) *colocation agreements as described in section*
20 *502 of the National Oceanic and Atmospheric Admin-*
21 *istration Commissioned Officer Corps Amendments*
22 *Act of 2020 (33 U.S.C. 851 note prec.).*

23 **SEC. 17. INTERNATIONAL COORDINATION.**

24 (a) *IN GENERAL.*—*The Under Secretary may develop*
25 *collaborative relationships and agreements with foreign*

1 *partners and counterparts to address transboundary issues*
 2 *pertaining to wildfires, fire weather, smoke, air quality,*
 3 *and associated conditions and hazards or other relevant me-*
 4 *eteorological phenomena, as appropriate, to facilitate full*
 5 *and open exchange of data and information.*

6 (b) *CONSULTATION.*—*In carrying out activities under*
 7 *this section, the Under Secretary shall consult with the De-*
 8 *partment of State and such other Federal partners as the*
 9 *Under Secretary considers relevant.*

10 **SEC. 18. SUBMISSIONS TO CONGRESS REGARDING THE**
 11 **FIRE WEATHER SERVICES PROGRAM, INCI-**
 12 **DENT METEOROLOGIST WORKFORCE NEEDS,**
 13 **AND NATIONAL WEATHER SERVICE WORK-**
 14 **FORCE SUPPORT.**

15 (a) *REPORT TO CONGRESS.*—*Not later than 540 days*
 16 *after the date of the enactment of this Act, the Under Sec-*
 17 *retary shall submit to the appropriate committees of Con-*
 18 *gress—*

19 (1) *the plan described in subsection (b);*

20 (2) *the assessment described in subsection (c);*

21 *and*

22 (3) *the assessment described in subsection (d).*

23 (b) *FIRE WEATHER SERVICES PROGRAM PLAN.*—

24 (1) *ELEMENTS.*—*The plan submitted under sub-*
 25 *section (a)(1) shall detail—*

1 (A) *the observational data, modeling re-*
2 *quirements, ongoing computational needs, re-*
3 *search, development, and technology transfer ac-*
4 *tivities, data management, skilled-personnel re-*
5 *quirements, engagement with relevant Federal*
6 *emergency and land management agencies and*
7 *partners, and corresponding resources and*
8 *timelines necessary to achieve the functions de-*
9 *scribed in subsection (b) of section 3 and the pri-*
10 *orities described in subsection (c) of such section;*
11 *and*

12 (B) *plans and needs for all other activities*
13 *and requirements under this Act and the amend-*
14 *ments made by this Act.*

15 (2) *SUBMITTAL OF ANNUAL BUDGET FOR*
16 *PLAN.—Following completion of the plan submitted*
17 *under subsection (a)(1), the Under Secretary shall,*
18 *not less frequently than once each year concurrent*
19 *with the submission of the budget by the President to*
20 *Congress under section 1105 of title 31, United States*
21 *Code, submit to Congress a proposed budget cor-*
22 *responding with the elements detailed in the plan.*

23 (c) *INCIDENT METEOROLOGIST WORKFORCE NEEDS*
24 *ASSESSMENT.—*

1 (1) *IN GENERAL.*—*The Under Secretary shall*
2 *conduct a workforce needs assessment on the current*
3 *and future demand for additional incident meteorolo-*
4 *gists for wildfires and other high-impact fire weather*
5 *events.*

6 (2) *ELEMENTS.*—*The assessment required by*
7 *paragraph (1) shall include the following:*

8 (A) *A description of staffing levels as of the*
9 *date on which the assessment is submitted under*
10 *subsection (a)(2) and projected future staffing*
11 *levels.*

12 (B) *An assessment of the state of the infra-*
13 *structure of the National Weather Service as of*
14 *the date on which the assessment is submitted*
15 *and future needs of such infrastructure in order*
16 *to meet current and future demands, including*
17 *with respect to information technology support*
18 *and logistical and administrative operations.*

19 (3) *CONSIDERATIONS.*—*In conducting the assess-*
20 *ment required by paragraph (1), the Under Secretary*
21 *shall consider factors including projected climate con-*
22 *ditions, infrastructure, relevant hazard meteorological*
23 *response system equipment, user needs, and feedback*
24 *from relevant stakeholders.*

25 (d) *SUPPORT SERVICES ASSESSMENT.*—

1 (1) *IN GENERAL.*—*The Under Secretary shall*
 2 *conduct a workforce support services assessment with*
 3 *respect to employees of the National Weather Service*
 4 *engaged in emergency response.*

5 (2) *ELEMENTS.*—*The assessment required by*
 6 *paragraph (1) shall include the following:*

7 (A) *An assessment of need for further sup-*
 8 *port of employees of the National Weather Serv-*
 9 *ice engaged in emergency response through serv-*
 10 *ices provided by the Public Health Service.*

11 (B) *A detailed assessment of appropriations*
 12 *required to secure the level of support services*
 13 *needed as identified in the assessment described*
 14 *in subparagraph (A).*

15 (3) *ADDITIONAL SUPPORT SERVICES.*—*Following*
 16 *the completion of the assessment required by para-*
 17 *graph (1), the Under Secretary shall seek to acquire*
 18 *additional support services to meet the needs identi-*
 19 *fied in the assessment.*

20 **SEC. 19. GOVERNMENT ACCOUNTABILITY OFFICE REPORT;**

21 **FIRE SCIENCE AND TECHNOLOGY WORKING**

22 **GROUP; STRATEGIC PLAN.**

23 (a) *GOVERNMENT ACCOUNTABILITY OFFICE RE-*
 24 *PORT.*—*Not later than 1 year after the date of the enact-*

1 *ment of this Act, the Comptroller General of the United*
2 *States shall submit to Congress a report that identifies—*

3 *(1) the authorities, roles, and science and sup-*
4 *port services relating to wildland fire prediction, de-*
5 *tection, forecasting, modeling, resilience, response,*
6 *management, and assessment provided by—*

7 *(A) the Department of Commerce, including*
8 *the Administration and the National Institute of*
9 *Standards and Technology;*

10 *(B) the National Aeronautics and Space*
11 *Administration;*

12 *(C) the Department of the Interior;*

13 *(D) the Department of Agriculture;*

14 *(E) the National Science Foundation;*

15 *(F) the Department of Energy;*

16 *(G) the Federal Emergency Management*
17 *Agency;*

18 *(H) the Department of Transportation;*

19 *(I) the Environmental Protection Agency;*

20 *and*

21 *(J) the Department of Defense; and*

22 *(2) recommended areas in and mechanisms by*
23 *which the agencies listed under paragraph (1) could*
24 *support and improve—*

1 (A) coordination between Federal agencies,
2 State and local governments, Tribal govern-
3 ments, and other relevant stakeholders, including
4 through examination of possible public-private
5 partnerships;

6 (B) research and development, including
7 interdisciplinary research, related to fire envi-
8 ronments, wildland fires, associated smoke, and
9 the impacts of such environments, fires, and
10 smoke, in furtherance of a coordinated inter-
11 agency effort to address wildland fire risk reduc-
12 tion;

13 (C) data management and stewardship, the
14 development and coordination of data systems
15 and computational tools, and the creation of a
16 centralized, integrated data collaboration envi-
17 ronment for agency data, including historical
18 data, relating to weather, fire environments,
19 wildland fires, associated smoke, and the impacts
20 of such environments, fires, and smoke, and the
21 assessment of wildland fire risk mitigation meas-
22 ures;

23 (D) interoperability, usability, and accessi-
24 bility of the scientific data, data systems, and

1 *computational and information tools of the agen-*
 2 *cies listed under paragraph (1);*

3 *(E) coordinated public safety communica-*
 4 *tions relating to fire weather events, fire hazards,*
 5 *and wildland fire and smoke risk reduction*
 6 *strategies; and*

7 *(F) secure and accurate real-time data,*
 8 *alerts, and advisories to wildland firefighters*
 9 *and other decision support tools for wildland fire*
 10 *incident command posts.*

11 ***(b) FIRE SCIENCE AND TECHNOLOGY WORKING***
 12 ***GROUP.—***

13 ***(1) ESTABLISHMENT.—****Not later than 90 days*
 14 *after the date of the enactment of this Act, the Execu-*
 15 *tive Director of the Interagency Committee for Ad-*
 16 *vancing Weather Services established under section*
 17 *402 of the Weather Research and Forecasting Innova-*
 18 *tion Act of 2017 (15 U.S.C. 8542) (in this section re-*
 19 *ferred to as the “Interagency Committee”) shall estab-*
 20 *lish a working group, to be known as the “Fire*
 21 *Science and Technology Working Group” (in this sec-*
 22 *tion referred to as the “Working Group”).*

23 ***(2) CHAIR.—****The Working Group shall be*
 24 *chaired by the Under Secretary, or designee.*

25 ***(3) GENERAL DUTIES.—***

1 (A) *IN GENERAL.*—*The Working Group*
2 *shall seek to build efficiencies among the agencies*
3 *listed under subsection (a)(1) and coordinate the*
4 *planning and management of science, research,*
5 *technology, and operations related to science and*
6 *support services for wildland fire prediction, de-*
7 *tection, forecasting, modeling, resilience, re-*
8 *sponse, management, and assessments.*

9 (B) *INPUT.*—*The Working Group shall so-*
10 *licit input from non-Federal stakeholders.*

11 (c) *STRATEGIC PLAN.*—

12 (1) *IN GENERAL.*—*Not later than 540 days after*
13 *the date of the enactment of this Act, the Interagency*
14 *Committee shall prepare and submit to Congress a*
15 *strategic plan for interagency coordination, research,*
16 *and development that will improve the assessment of*
17 *fire environments and the understanding and pre-*
18 *diction of wildland fires, associated smoke, and the*
19 *impacts of such fires and smoke, including—*

20 (A) *at the wildland-urban interface;*

21 (B) *on communities, buildings, and other*
22 *infrastructure;*

23 (C) *on ecosystem services and watersheds;*

24 (D) *social and economic impacts;*

1 (E) by developing and encouraging the
2 adoption of science-based and cost-effective meas-
3 ures—

4 (i) to enhance community resilience to
5 wildland fires;

6 (ii) to address and mitigate the im-
7 pacts of wildland fire and associated smoke;
8 and

9 (iii) to restore natural fire regimes in
10 fire-dependent ecosystems;

11 (F) by improving the understanding and
12 mitigation of the effects of weather and long-term
13 drought on wildland fire risk, frequency, and se-
14 verity;

15 (G) through integrations of social and be-
16 havioral sciences in public safety fire commu-
17 nication;

18 (H) by improving the forecasting and un-
19 derstanding of prescribed fires and the impacts
20 of such fires, and how those impacts may differ
21 from impacts of wildland fires that originate
22 from an unplanned ignition; and

23 (I) consideration and adoption of any rec-
24 ommendations included in the report required by

1 *subsection (a) pursuant to paragraph (2) of such*
2 *subsection.*

3 (2) *PLAN ELEMENTS.—The strategic plan re-*
4 *quired by paragraph (1) shall include the following:*

5 (A) *A description of the priorities and needs*
6 *of vulnerable populations.*

7 (B) *A description of high-performance com-*
8 *puting, visualization, and dissemination needs.*

9 (C) *A timeline and guidance for implemen-*
10 *tation of—*

11 (i) *an interagency data sharing system*
12 *for data relevant to performing fire assess-*
13 *ments and modeling fire risk and fire be-*
14 *havior;*

15 (ii) *a system for ensuring that the fire*
16 *prediction models of relevant agencies can*
17 *be interconnected; and*

18 (iii) *to the maximum extent prac-*
19 *ticable, any recommendations included in*
20 *the report required by subsection (a).*

21 (D) *A plan for incorporating and coordi-*
22 *nating research and operational observations, in-*
23 *cluding from infrared technologies, microwave,*
24 *radars, satellites, mobile weather stations, and*
25 *uncrewed aerial systems.*

1 (E) *A flexible framework to communicate*
2 *clear and simple fire event information to the*
3 *public.*

4 (F) *Integration of social, behavioral, risk,*
5 *and communication research to improve the fire*
6 *operational environment and societal informa-*
7 *tion reception and response.*

8 **SEC. 20. FIRE WEATHER RATING SYSTEM.**

9 (a) *IN GENERAL.*—*The Under Secretary shall, in col-*
10 *laboration with the Chief of the United States Forest Serv-*
11 *ice, the Director of the United States Geological Survey, the*
12 *Director of the National Park Service, the Administrator*
13 *of the Federal Emergency Management Agency, and such*
14 *stakeholders as the Under Secretary considers appro-*
15 *priate—*

16 (1) *evaluate the system used as of the date of the*
17 *enactment of this Act to rate the risk of wildfire; and*

18 (2) *determine whether updates to that system are*
19 *required to ensure that the ratings accurately reflect*
20 *the severity of fire risk.*

21 (b) *UPDATE REQUIRED.*—*If the Under Secretary de-*
22 *termines under subsection (a) that updates to the system*
23 *described in paragraph (1) of such subsection are necessary,*
24 *the Under Secretary shall update that system.*

1 **SEC. 21. AVOIDANCE OF DUPLICATION.**

2 (a) *IN GENERAL.*—*The Under Secretary shall ensure,*
3 *to the greatest extent practicable, that activities carried out*
4 *under this Act and the amendments made by this Act are*
5 *not duplicative of activities supported by other parts of the*
6 *Administration or other relevant Federal agencies.*

7 (b) *COORDINATION.*—*In carrying out activities under*
8 *this Act and the amendments made by this Act, the Under*
9 *Secretary shall coordinate with the Administration and*
10 *heads of other Federal research agencies—*

11 (1) *to ensure those activities enhance and com-*
12 *plement, but do not constitute unnecessary duplica-*
13 *tion of, efforts; and*

14 (2) *to ensure the responsible stewardship of*
15 *funds.*

16 **SEC. 22. AUTHORIZATION OF APPROPRIATIONS.**

17 (a) *IN GENERAL.*—*In addition to amounts appro-*
18 *priated under title VIII of division D of the Infrastructure*
19 *Investment and Jobs Act (Public Law 117–58; 135 Stat.*
20 *1094), there are authorized to be appropriated to the Ad-*
21 *ministration to carry out new policies and programs to ad-*
22 *dress fire weather under this Act and the amendments made*
23 *by this Act—*

24 (1) *\$15,000,000 for fiscal year 2023;*

25 (2) *\$111,360,000 for fiscal year 2024;*

26 (3) *\$116,928,000 for fiscal year 2025;*

1 (4) \$122,774,400 for fiscal year 2026; and

2 (5) \$128,913,120 for fiscal year 2027.

3 (b) *PROHIBITION.*—None of the amounts authorized to
4 be appropriated by subsection (a) may be used to unneces-
5 sarily duplicate activities funded under title VIII of divi-
6 sion D of the Infrastructure Investment and Jobs Act (Pub-
7 lic Law 117–58; 135 Stat. 1094).

Calendar No. 662

117TH CONGRESS
2^D SESSION
S. 4237

A BILL

To establish and maintain a coordinated program within the National Oceanic and Atmospheric Administration that improves wildfire, fire weather, fire risk, and smoke related forecasting, detection, modeling, observations, and service delivery, and to address growing needs in the wildland-urban interface, and for other purposes.

DECEMBER 15, 2022

Reported with an amendment